

American Aviation

The Independent Voice of American Aeronautics

JULY 15, 1944

The Days Are Passing

IT IS NOW more than ever apparent that this country must move ahead swiftly in the field of international air transportation or all of its present opportunities for bargaining positions will evaporate. The war in Europe is moving too rapidly to a conclusion to waste more time. Emergency wartime decisions must be made now. In the absence of a stated foreign air policy by the Congress, the executive branch must act on an emergency basis.

Last issue in this space we pleaded that the Senate should not rush headlong into establishing a haphazard air policy until it had examined the issues thoroughly. We reiterate that a permanent postwar air policy must be carefully worked out.

But in the meantime it is imperative that American flagships be placed in operation among some of the major trade routes of the world. This is the time when operating concessions can and must be secured—not later. The question of who is to be the permanent operator can await later decision. But we must not let the troublesome problem of who is to be the operator cloud over the basic issue, which is that U. S. planes must start providing commercial or semi-commercial services on behalf of the American people and their government.

It is not too much to say that our postwar position in the air is in danger of being seriously affected by lack of decisive action now. From the standpoint of the national interest, the question of who is to do the operating, and the question of whether we are to have one or many foreign airlines, must be subservient to the big crying need of

(Turn to page 6)



In Charge at Wright

G. M. Williams, senior vice president of Curtiss-Wright Corp., has been named vice president and general manager of Wright Aeronautical Corp., succeeding Myron B. Gordon who has resigned. Williams has been working with Gordon since last year in preparation for his new position.

Late Bulletins

Prototypes Authorized

War Production Board issued an order July 12 permitting manufacture of prototype aircraft and aircraft products which can be built "without diverting any manpower, technical skill, or facilities from activities connected with the war effort."

Committee of Five

A committee of five will assume the executive functions of the Airlines Committee for U. S. Air Policy heretofore performed by S. J. Solomon, committee chairman who has resigned. The committee membership is as follows: Thomas Burke, AMEX; O. M. Mosier, American; Jack Nichols, TWA; Robert Thach, Northwest; and Solomon, Northeast.

Surplus Materials: The big headache represented by tremendous quantities of surplus materials which have piled up in aircraft plants, and no longer can be used because of changes in design, apparently is about to evaporate.

First of the surplus material to be disposed of through the private warehousing plan began to move July 10 from Republic Aviation Corp.'s Farmingdale plant to warehouses in New York. Similar shipments will follow soon from other plants.

Since this plan applies only to Government-owned surpluses, efforts have been pushed for some time to permit the disposal of Contractor-owned materials and there is now every indication that the proposal will work smoothly. Under a plan advanced by the materials division of the Aircraft War Production Council, companies which are to be renegotiated may sell their surplus usable ASU-41 materials to the Government at \$1, absorb the loss, but have it included as an allowable cost of production. Thus it will not be necessary for the contractor to file a claim, a costly and time-consuming process.

It was reported this week that renegotiation boards and the Internal Revenue Department have tentatively approved this plan.

Africa Pushes Plans: A three-man delegation from the Union of South Africa is expected in this country shortly to study airport construction, maintenance and operations. Arrangements have been made through the CAA and the State Department and the tour probably will take the group to all parts of the country. Duration of the official visit will be about six weeks.

The bilateral informal discussions on international air policy which the U. S. is conducting with Great Britain, Canada, Russia, and China, also will include the Union of South Africa. South African Airways, a government-owned and operated airline, is desirous of operating to the U. S. reciprocally with an American company to South Africa.

Severance Pay: One of the problems which soon will be worrying aircraft manufacturers is the question of severance pay. While the War Labor Board has developed no clearcut policy, a pattern is being built

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Trend of The News



When Whistle Stops Become Ocean Ports...

Thousands of Americans reared in small towns and villages, will remember their boyhood thrill when "The Limited" made one of its rare stops—on signal—at their town. In the lexicon of railroading, such places—too small to warrant regular scheduled service—were called "whistle stops."

But in tomorrow's peacetime world, hundreds of remote and isolated points—the whistle stops of yesterday—can become ports in the ocean of the air.

For with air travel there are no "inland" towns. Some mid-western communities are actually closer by air to foreign countries... than coastal seaport cities. And the development of feeder line

helicopter transportation, can bring nearby towns within minutes of great airports serving transoceanic airlines.

In addition to its use for short haul feeder line service, the helicopter can be useful for "shuttle" transportation from metropolitan centers to airports, and its ultimate development will make possible its use as a private, home-based aircraft.

At McDonnell, we are devoting full-time efforts to the production of planes, parts, and plastics for war. But our engineers and designers are working too, toward the development of better aircraft—better adapted to the needs of the future.

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a deadly
sting



A DARK shadow streaks across the night sky. A newcomer enters the battle on the side of Democracy. Bearing a lethal sting, the Black Widow, America's newest night fighter, packs the power to destroy anything that flies. Swift as an arrow, formidable as its famed namesake, this new ship, designed by Northrop, in co-operation with the Army Air Force's Matériel Command, promises a deadlier weapon to the men who are bringing victory to the United Nations.

And in the Pratt & Whitney engines that drive this most powerful of all pursuit planes are Foote Bros. Gears—gears that of necessity meet new standards in metallurgical and dimensional perfection.

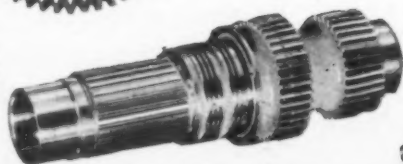
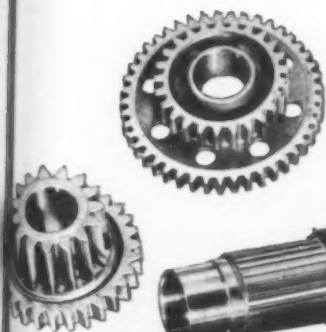
The Black Widow forecasts a new conception of design for the world of tomorrow—an era where high speed, the demand for greater efficiency, will find new uses for high precision gears. The engineering skill, production technique, manufacturing know-hows that have made possible the mass production of gears of such high precision may suggest applications in the development of machines you are designing for a world at peace.

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American Aviation

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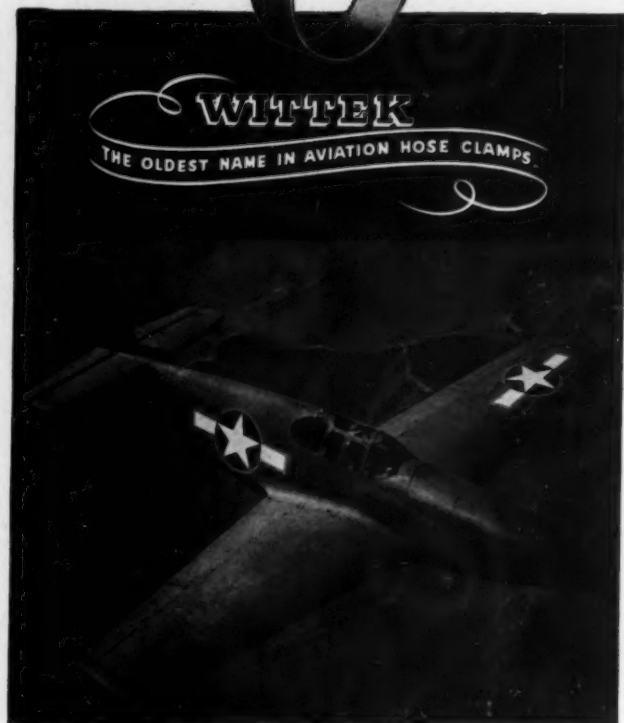
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WITTEK *Aviation*
HOSE CLAMPS

(Continued from page 1)

getting American airplanes serving the major airports of the world.

We regret to have to observe that the threat of government-owned and operated airlines is too great at this point to be ignored. Not one of the three major factions in the industry—Pan American Airways, United Air Lines, or the sixteen domestic companies comprising the airline policy committee—want government ownership. But unintentional as they may be, it cannot be overlooked that the industry groups themselves are moving the U. S. closer to government operation of U. S. foreign airlines by their rival plans and rival pleadings.

Our foreign air policy is rising rapidly to one of strong national issues. In the final analysis, the national interests rise above the ambitions and plans of any single airline or group of airlines. We earnestly hope that private ownership will continue to dominate the air transport field, at home and abroad, for we oppose government ownership and operation as strongly as possible, but the issues of *who* is to do the operating must come second behind the crying need for American airplanes to engage in world air commerce in the interests of this nation's welfare and security.

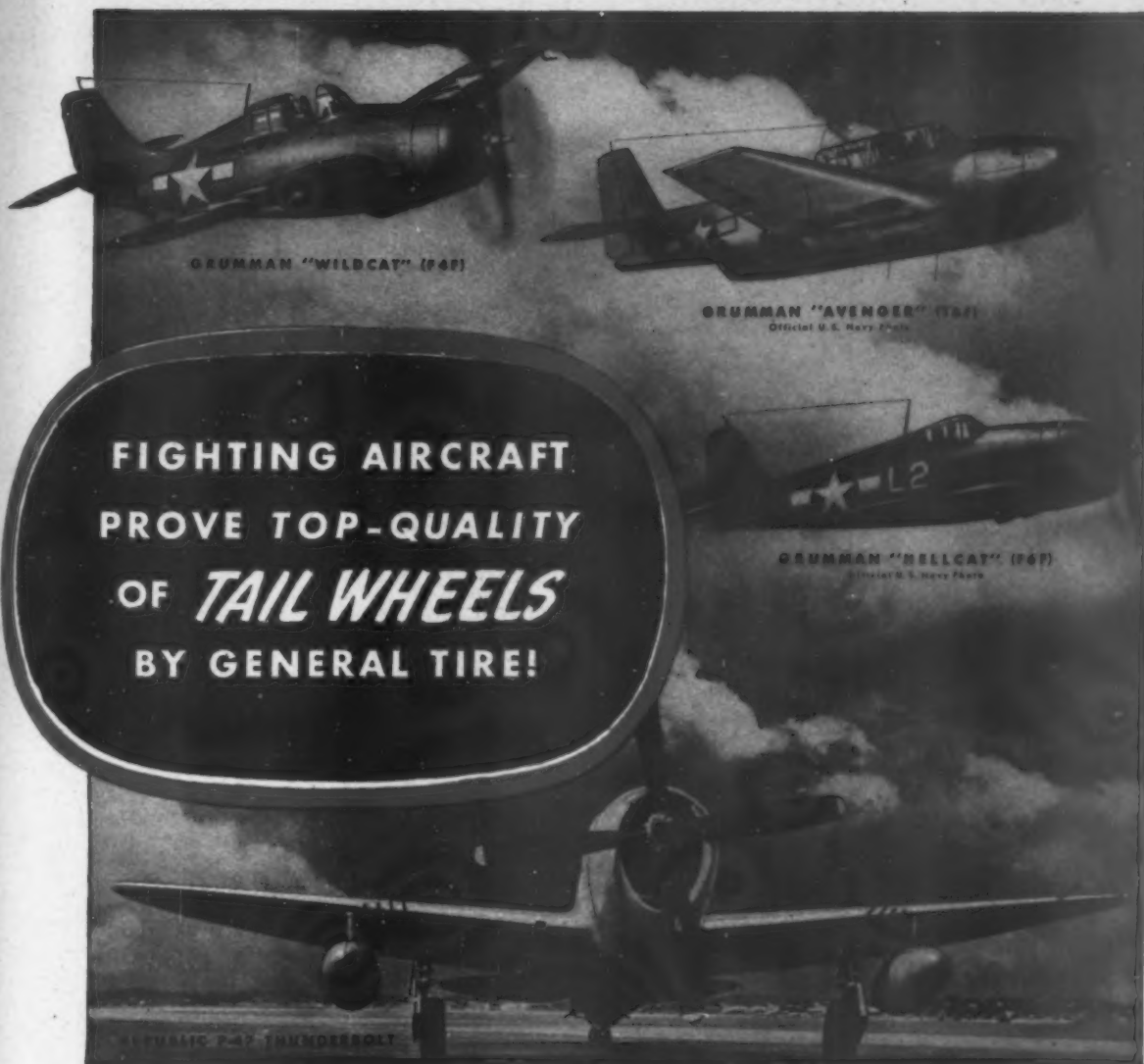
Other countries are fast overtaking us in our world air plans. Our bargaining position for commercial operating rights will soon disappear when we stop giving, lending and leasing to everybody the world over.

What, then, is the solution? As we see it, the Air Transport Command offers the only proper instrumentality of the United States in this interim period until our basic policy is crystallized. Permit it to carry civilians of this and other countries with paid fares. Or permit it to contract to private operators on a temporary basis, to operate commercially under the American flag. And permit our largest foreign certificated carrier, Pan American, to resume commercial operations free of most of the wartime restrictions which have limited it largely to military operations, except in Latin America.

And there is another allied subject which needs airing at this point, too. This is the all-powerful Munitions Assignment Committee, an austere body which keeps itself smugly wrapped up in mystery and secrecy, but which allocates every airplane that comes off the assembly lines of the manufacturing industry. The MAC must look beyond the battles and consider the war. More than once recently it has had an opportunity to be of immeasurable benefit to this country's postwar air position by aiding countries that needed airplanes and would have granted us operating rights in return for the favor. The MAC must broaden its outlook and consider the nation, as well as the Army. It could well take a tip from the British who use their Army not only to fight battles and win the tactical victories but also as an instrumentality of the government toward the larger issues upon which wars are fought.

This country's postwar air position is much more endangered than is generally realized. Intelligent decisive action is needed. We must get over our naive, Santa Claus approach to world problems. We must also

(Turn to page 9)



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get over the idea that a war consists of battles, period. Wars are much more complex than that. We're going to be far behind the world parade, and squeezed out of many bargaining positions, unless American airplanes start operating on behalf of the peoples of this country.

Caution on Surpluses

THE GOVERNMENT has now established adequate machinery for the disposal of surplus planes, but great care must be taken in informing the public as to what actually constitutes surplus planes. Recently a newspaper story appeared in the press from coast to coast relating that some 11,000 planes have been declared surplus and are available for sale. The morale of the workers in aircraft plants sunk appreciably. Why work so hard to build more planes, they argued, if the government is already disposing of surpluses.

The truth is that half of the so-called surplus planes are junk. They are worn out; obsolete, in need of major repairs, and are not suitable for combat or training use. A great many of the planes are worn-out trainers. Certainly no first-line combat planes are being declared surplus. Not enough attention is being given in Washington to the morale effects of pronouncements on such matters as surplus planes and contract terminations.

Bad Handling

THE NAVY DEPARTMENT could stand a little intelligent public and industrial relations in its handling of contract cancellations. One of its aircraft contracts was cancelled without advance notice. The word was given to the newspapers one evening. Next morning the workers read about it. The company officials learned about it from the newspapers. Two days later the company received its cancellation notice. This is sheer bungling on the part of the Navy. There have been other instances just as bad, if not worse. The Navy cannot whip up production enthusiasm on the one hand and then deliver knock-out blows to industrial morale on the other hand.

Safeguarding the Future

FROM Charles E. Wilson, executive vice chairman of the War Production Board, have come some very statesmanlike words and planning. We think Wilson, probably more than any other individual, was behind the creation of a committee recently of Army and Navy officers and civilian scientists to formulate a plan for postwar research to meet the requirements of the Army and the Navy.

Postwar research is being overdone as an expression, but there is no single place where research and planning can do more good for the nation as a whole than in our national defense. Many Americans have died starting with Pearl Harbor because we weren't prepared.

Back some six months or so ago Mr. Wilson gave

an address in New York which should not be forgotten. "Has it ever occurred to you," he said, "that really good managers, in government or business, would never have allowed their own businesses to operate as haphazardly and spasmodically as has the business of defending the United States against its enemies?"

"In industry we chart our sales and orders and keep a weather eye on material sources and market trends from year to year. Even the company that keeps my fuel oil tank supplied can tell me ahead of time when I will need oil. Yet when it comes to the vastly important and tragic business of war, we shut our eyes and stop our ears until it is so late that top management has to perform miracles, and men die while waiting for them."

With an emergency upon it, our industry and our Army and Navy teamed up to produce the greatest military machine the world has ever known. But it did not come until losses had been suffered and without great effort. What is needed is to keep this military-industry team functioning after the fighting in this war ends.

Certainly the production front, Mr. Wilson said, which today has some 20 million people in its command, "is as deserving of a continuing general staff operation in peacetime as the Army and Navy. More than that, it demands such continuity, if the services themselves are to be kept effectively ahead of their job. Once war is imminent, it is too late to draw full and immediate benefits from our civilian research, engineering, and production techniques in the creation of war products."

So it is with pleasure that we have learned of the appointment of a military-scientific committee, with Mr. Wilson heading the civilian group, to plan for the future. Certainly in airpower we must not let research and development lag for a moment. To do so will but repeat the tragedy of Pearl Harbor.

NAA Initiative on Airports

THE NATIONAL AERONAUTICS ASSOCIATION is demonstrating leadership in the important field of airports. The Airport Users Conference to be held in Washington on July 24-25 is a splendid starting point on the most important postwar subject facing all phases of aviation. The classification of landing areas into airports, skyroads and designated airports, is also a great help in eliminating the confusion existing among thousands of communities that need help in planning for the future.

In this connection it is a pleasure to pay tribute to the NAA's new general manager, Lowell Swenson, who is giving the NAA much-needed direction and energy. Aviation needs an aggressive public organization coordinating the many complex problems now arising and the NAA's decision to devote itself to the aviation consumer is a wise and fortunate one. With the trained leadership of William R. Enyart, the current president, NAA is showing signs of stepping out into the front as it should. In NAA the industry has an able spokesman. The coming airport conference is a favorable reflection on the new management.

WAYNE W. PARRISH

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up by regional boards which will have considerable significance as precedents. The New York regional board recently ordered severance pay in a dispute case as an alternative to advance notice of layoffs. In this case severance pay is on a basis of two weeks for one year's service up to four weeks for three or more years service. Quick cutbacks may pose a serious problem for some employers.

Hiring of Vets: An elaborate project which had been worked out through special committees of the Aircraft War

Production Councils for intensive recruitment of discharged service men, particularly for engineering and similar posts in aircraft plants, has been temporarily dropped. Manufacturers are beginning to fear the muddle which may ensue when contracts are cancelled. Seniority, labor union claims and many other problems will plague them when it comes to deciding who will be laid off and who will be kept. No one wants to complicate the picture any further.

Letters

No Longer a 'Gypsy'

Fort Worth, Tex.

To the Editor:

Does this answer your question: "How the name ever got started—Fixed Base Operator."

Many years ago the Aviation industry was composed of a few folks building a few military planes and some hardy rascals known as *Barnstormers*, flying semi-military planes. We had no airports. No service stations, radio or the hundreds of other divisions of pre-war aviation.

Some of these *Barnstormers* settled in various towns and villages and never went back to barnstorming. Perhaps the Gypsy drained from their blood. Or, might be they were just tired. Some dreamed of industrial empire and knew that to build the Empire one must stay put long enough to lay the bricks. Anyway they settled. Stayed put. And then and there was born the fixed base operator.

In time, other *Barnstormers* lighted in his pasture, heard his song and in them was instilled the desire to do likewise. An entire new business came into being.

Years ago it was quite a distinction to be known as a *Fixed Base Operator*. He was the envy of the brotherhood. He had a home. He was *FIXED*. Our old *Barnstormer* concocted the tag of *Fixed Base Operator* and pinned it on himself.

A short time after he settled he became a sort of country general store for aviation. He was the local advisor to all for all branches of aviation. To his original business of taking localities for a "hop" he added such activities as—

- Flight instruction school.
- Aerial ambulance service.
- Cross country taxi service.
- Service repair station.
- Storage company.
- Aircraft sales.

At various times and places he also manufactured airplanes.

He was ready to branch out again and become a specialist when along came the depression. He remained a *Fixed Base Operator* only because it took the combined revenue from all his activities to pay the landlord.

Things are different today. The *Fixed Base Operator* because of increased plane sales in the immediate pre-war days, CPTP and various war enterprises, has had some prosperous years. He can specialize and be known by his correct name. For example if he is to devote his talents towards plane sales, then he is primarily a *Plane Dealer*. If he goes in for storage, gasoline and oil sales then he is an *Aircraft Service Dealer*. Should he direct his shots for flight instruction then he is a *Flying School Owner* or a *Flying Academy*. On the other hand if there are, and there will always be, some of the people that will be in towns not large enough to support single enterprises of the above nature let them continue to call themselves—*Fixed Base Operators*. For that's just what they are. It best describes the country store of aviation and in its own right is an old and honored name.

FRANK X. MARA

Thanks, Maj. Moseley!

Glendale, Calif.

To the Editor:

Please accept my congratulations on the splendid presentation of the editorial marking the millionth hour of Southwest Airways flying training program, together with other congratulatory advertising appearing in the June 1 issue.

The space you have given and the manner in which it has been done are a fine example of your co-operation with the civil contract flying schools.

C. C. MOSELEY
President
Cal-Aero Academy

Lines Up with Colorado

Java Center, N. Y.

To the Editor:

I like your publication. I hope you keep it fearless. Remember the people who pay the cost of maintaining your magazine are the little people in aviation. The ones who would like to buy a plane and start down the road but can't because of the CAB or the CAA and because of the boys who want lots of rules and red tape, at least enough so that one would have to hire a political lawyer at \$1000 per day to get through it.

I have read your editorial entitled "Needless Red Tape" relating to Colorado certificates to its state carriers. I think this action by the Great Common State of Colorado is a protest against the CAB and its airline monopolistic policy. I have written the State of Colorado telling them that I am going to move out there and take my possessions with me. I hope every state in the union follows suit until the CAB realizes that any man, you or I, has a right to buy a plane, a bus or a truck and start on down the road with it without hiring a battery of lawyer politicians to go with us.

The State of Colorado was fed up with the CAB. The CAB's major function today is to make it hard for anyone except the big lines to get into the plane business. As I see it, I would like to see this airline business opened up for a little competition. At least it will make old CAB and CAA throw their catalogue of rules and regulations away or they're a-gonner.

Another thing where your publication can do a lot of good. When surplus aircraft now owned by DPC are sold see to it that everyone knows where to go and what to do to bid on a plane, be it a C-47 or P-40 or Cub. See to it that the distribution of these ships is as wide as possible and also see to it that these ships are not junked or destroyed or sold back to the manufacturing companies at a dime a dozen.

THOMAS F. FISHER

'Promotion' Deleted

Boston, Mass.

To the Editor:

Your editorial in the June 15th issue of *American Aviation* under the heading of "Aviation Terms" brought up a subject on which I have often pondered and it was indeed encouraging to me to have the subject brought out in the open so that others might start thinking. Your suggestion that all aviation groups discard the word "promotion" and use instead the more appropriate term of "advancement" is excellent and I am pleased to be able to say that "promotion" was deleted from my aviation vocabulary several years ago.

The use of the term "private flying," I believe, has more often been used to include all non-scheduled flying, as distinguished from scheduled airline flying, rather than to include only recreational flying; you may recall hearing me state my preference for the term "non-scheduled flying" in the address I gave before the Aviation Conference in Concord, N. H. in May. Of course this broad term should be broken down further into its component parts to include recreational flying, non-scheduled commercial flying such as is carried on by a fixed base operator, and also that type of aircraft operation which might be called "industrial flying." This latter term would include business trips made in privately owned aircraft and also flying accomplished in aircraft owned and operated by industrial concerns for carrying on the different phases of their various businesses. Al Williams in his well known "Gulphawk" is a good example of "industrial flying" while the man who owns a small plane and flies purely for pleasure comes under the "recreational flying" category.

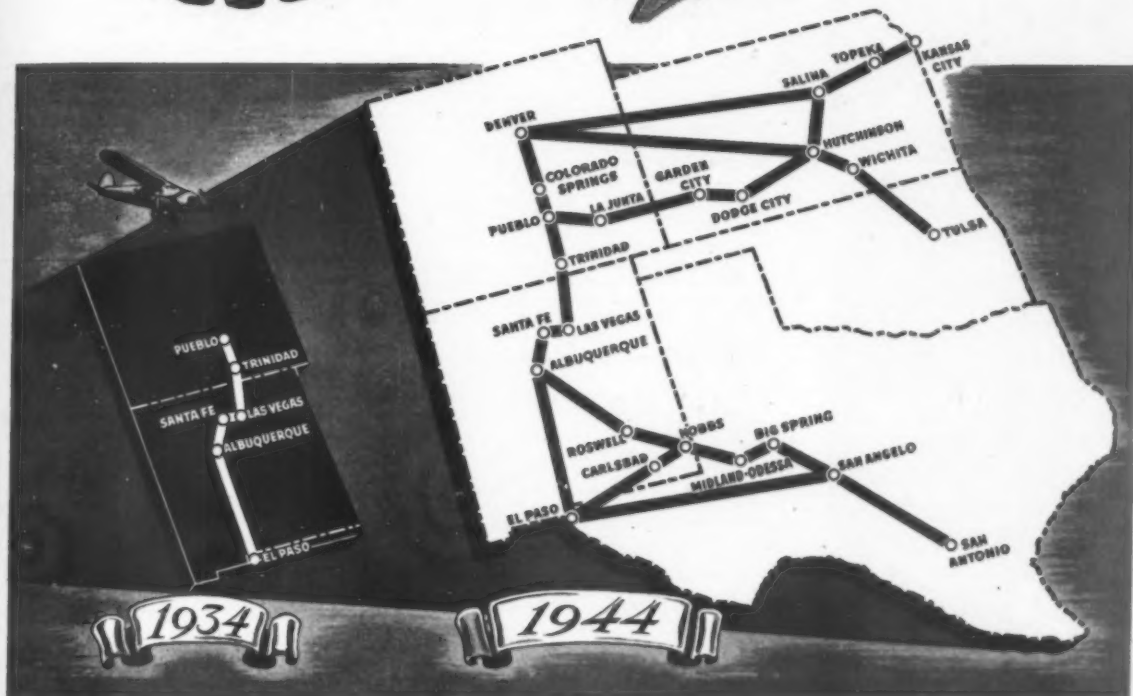
When it comes to a word to adequately label that type of flying carried on by a fixed base operator, I think we will have our troubles. "Fixed base operation" is not good because it includes all kinds of ground activities as well as flying. "Fixed base flying" is not much better because it infers that charter cross-country trips are excluded. "Non-scheduled commercial flying" is too clumsy to use although it does seem to express quite well the type of flying I have in mind. Possibly some of your other readers will come forth with good suggestions if this subject is kept alive in *American Aviation*.

I think everyone will agree that we should discard the "promotion of aviation" for the "advancement of aviation" and many will concur in the use of the term "recreational flying" instead of "private flying." I, for one, cast my vote for "industrial flying" to include such non-scheduled flying as is done for the benefit of business or industry. But the fixed-base operator, who has always had a hard fight to keep out of the red, can't even find a short, concise name to adequately classify his particular type of flying. I am hoping that you can help out.

E. FLETCHER INGALLS



MORE THAN 50,000,000 PASSENGER MILES OVER THE WEST



THIS is Continental's 10th year in the business of flying... ten years of growth from an initial route of 541 miles to the present 2,670 miles of airways serving six western states.

In addition to contributing to the network of air service vital to the nation's prosperity and security, Continental has been privileged to further the war effort by—

Modifying 2125 heavy bombers at the Denver Modification Center... Training pilots and technicians for Army duty.

Flying thousands of miles for the Army Air Transport Command.

To the men and women of Continental—the mechanics, engineers, pilots, dispatchers, radio operators, traffic and operations people, stewardesses, and other valuable personnel—belongs the credit for this airline's contribution to the welfare of the nation. And when the war is won, they will continue working together to bring new prosperity to the region we are privileged to serve, through constantly improved air transportation.

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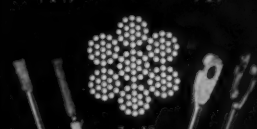
All Macwhyte aircraft products are made to conform to A-N specifications... including:

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... in eye end, turnbuckle end, stud end and fork end.

Aircraft Slings
... custom-built for your work.
Both standard wire rope and braided slings.

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Manufacturers of MACWHYTE
"Hi-Fatigue" Aircraft Cables—"Safe-Lock" Cable Terminals—Aircraft Tie-Rods—Braided Wire Rope Slings—and Wire Rope for all requirements.

Books

AIRPLANE ENGINE MECHANICS, Questions and Answers, by Rolla Hubbard and Augustin Dilworth. McGraw-Hill Book Co., New York, N. Y. 280 pages. \$3.00.

The questions in this book are designed principally to aid in preparation for obtaining a Civil Aeronautics Administration airplane-engine license. The authors assume that the reader is familiar with the fundamental principles of internal-combustion engines and their various accessories.

Hubbard is an instructor in the flight engineer school of Pan American Airways, and Dilworth is an inspector for American Export Airlines.

THEY FLY TO FIGHT—The Story of Airborne Divisions. By Keith Ayling. D. Appleton-Century Co., New York. 191 pp.

Once again, belated credit goes to Gen. Billy Mitchell. The author recalls that it was Mitchell who, in 1918, confided the idea to Gen. Pershing that "if our troops cannot break the enemy line, why should we not fly them over the line in big planes, and drop them by parachute with their arms and artillery... to hold defensive positions." Ayling tells more than the story of paratroopers. He discusses glider pilots and glider-borne troops—how they train and what they fight with. But he anticipates only a few of the airborne tactics revealed on D-Day and the days immediately following the Invasion. Ayling now must write a new chapter, or perhaps a new book. Suggested title: "After June 6, 1944."

A GUIDE TO NAVAL AVIATION. By Lieutenants Wallace W. Elton, Alfred H. Driscoll, Robert N. Burchmore, and Lt. (jg) Gray B. Larkum, USNR. McGraw-Hill Book Co., New York. 296 pp.

Four instructors in Naval indoctrination have collaborated in this one-volume introduction to the many Naval aviation topics presented individually in other books. The authors don't say such books are long-winded, or dull, but they feel that limitations of time often make it difficult, in civilian life as well as in the service, to utilize large numbers of books to gain "introductory familiarization" with a given subject. Hence this handy volume, with its especially well-selected photos and drawings.

BOMBERS. By Keith Ayling. Thomas Y. Crowell Co., New York. 193 pp. \$2.50.

The heroes of this informative book are the contemporary big planes themselves—Flying Fortresses, Liberators, Stirlings, Halifaxes, the ugly Stukas. But the author dips into history, too, going back to 1912 when an Englishman, Snowden Smedley, flying for the Italians, dropped a 100-pound bomb on the Turks. Ayling, an ex-bomber pilot, weighs the limitations as well as the capabilities of the modern "heavy".

THE AIRCRAFT BOOK FOR 1944. Edited by Howard Mingos. 726 pp. Illustrated. Published by Lancelar Publishers, Inc., New York. \$6.00.

The 26th annual edition of this official publication of the Aeronautical Chamber of Commerce follows the general outline of preceding editions. It is a review of 1943 with special emphasis on the war. The index seems to be somewhat less complete than before but basic information has been increased. There is a notable lack of statistical information. Three-way drawings are given for many of the well-known U. S. planes. Much more information is given on parts and accessories but the review manner in which it is treated makes it more for the historical record than for actual day-to-day use. Essentially this is a reference and historical record of the entire aircraft industry.

AIRCRAFT MECHANIC'S POCKET MANUAL, Third Revised Edition, by Joseph A. Ash-kouth. Pitman Publishing Co., New York and Chicago. \$1.50.

Purpose of the manual, the author states, is to bring to the man in the shop, "the man who makes the airplane, all the basic data which he needs each day." The author has had access to the latest Army, Navy and commercial aircraft-design recommendations, excepting confidential data not released for publication.

CELESTIAL NAVIGATION, by Walter Hadel. McGraw-Hill Book Co. 261 pages. \$3.25.

This book, written by the chief navigation instructor of United Air Lines, places emphasis primarily on the problem and secondarily upon the theory of the subject. The reader is taken on imaginary navigation flights in which he determines the position of the aircraft by means of celestial fixes. The text contains many problems involving three-star fixes. Each problem illustrates a celestial navigation principle. A complete solution is given for each type of problem.

New Films

The Princeton Film Center announces production of the first documentary motion picture in color on the subject of molded plastic-plywood construction of multi-engine aircraft. The film was produced for Fairchild Engine and Airplane Corp. The Princeton center also announces "The Helicopter" has been scheduled. This film will trace the development of rotary winged aircraft and will show the principal differences between helicopters and autogiros.

The Industrial Incentive Division, United States Navy, announces that a new combat film, "The Black Cats" is now available for exclusive showings to war workers. "The Black Cats" is an authentic film report, produced in the South Pacific, of the Catalina Patrol Bombers.

Obituary

Hollis-Thompson

Hollis Thompson, 46, vice president of American Airlines and president of American Airlines de Mexico, died suddenly July 6 in Cleveland. Thompson, who apparently had been in good health, was found dead in his room at the Hotel Statler. Death was believed due to a cerebral hemorrhage. He recently had been placed in charge of the company's route expansion program calling for the addition of 5,000 miles in its domestic routes and 3,630 miles to its international routes.

Thompson joined American in March, 1940, as regional vice president at Los Angeles. He had been city manager of Berkeley, Cal., from 1930 to 1940. In 1942 he went to Mexico City as vice president and general manager of the newly formed American Airlines de Mexico. He became president in 1943. In May of this year he transferred his headquarters to New York.

He is survived by his widow, Margaret Thompson, and a daughter, 3½.

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*knockout specialist
from stratosphere to sea level*

Having won a reputation as master of the stratosphere,
the Republic P-47 Thunderbolt now demonstrates its power as a low-level fighter-bomber
in clearing the way for invasion. After attacking without warning
at tree-top levels, the Thunderbolt speedily heads skyward at a new, faster
rate of climb—aided by new wider Curtiss Hollow Steel blades.



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BREEZE SHIELDING CONDUIT



CLEARING all Wires!

Breeze Flexible Conduit Shields and Protects Communications and Wiring Systems

Any current-carrying wire in an aircraft electrical system is a potential source of interference with radio communications unless properly shielded. Breeze Flexible Shielding Conduit, produced in a wide range of diameters, can be used in conjunction with Breeze Conduit Fittings and Multiple Electrical Connectors to meet practically any shielding requirement.

The custom design of complete radio ignition shielding harnesses is a Breeze specialty, based on years of pioneering experience in the field.

Breeze Flexible Shielding Conduit is in service today with fighting units of land, sea, and air, supplementing the many other well-known items of Breeze equipment that are helping the United Nations along the road to Victory.


Breeze 

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PRODUCTION FOR VICTORY • PRODUCTS FOR PEACE



Breeze Shielding guards communications against high frequency interference from spark plugs and ignition system circuits.



SPOTTING JAPS IN THE "WILLIWAWS"

ON May 11, 1943, an American Task Force landed on Attu in the Aleutians to drive out the invading Japs. Drive them out they did after prolonged and bitter action in which bullets and arctic weather took heavy toll. This epic action provided one of the early instances of the effective support of ground troops by carrier-based Naval planes.

The heroic men of Attu will not forget the curse of Aleutian climate. Bitter cold. Dense fog. Snow and rain 250 days in the year. A pilot may take off in perfect weather yet 10 minutes later may be unable to land because fog has blanketed his carrier or his landing field.

The Japs used this natural phe-

nomenon to clever advantage. They placed their men and guns right on the fog line. Result—they could see the attackers but the attackers could not see them. And the wily Japs would shift up and down the mountainous coasts, always keeping under cover of the fog. It's pretty hard to kill a foe you can't even see.

The Japs and the fogs weren't the only foes around Attu. Sleet storms, sudden squalls, freezing clouds that load the wings of a bomber with a ton of ice in less than a minute. And the "williwaws" that can drop a plane 3000 feet in a few seconds.

But the Japs had to be routed from U. S. soil in a hurry . . . dead or alive, preferably dead. That called for bombing in weather as treacherous as the foe.

The Navy knew the Kingfisher was the bird to turn the trick . . . to spot targets and guide our bombing planes where they could drop their deadly eggs in the midst of the foe's strongholds. Because they are Edo Float-equipped, Kingfishers (OS2Us) are known as the planes with "sea-going legs"—because they are able to land on rough water and get off again.

Up went the Kingfishers to serve as spotting planes for the carrier-

launched planes assigned to carry out bombing missions. Targets designated by ground units were reported to flights of OS2Us based in the area and relayed through them to the bombing planes. Revetted positions and fox-holes of the enemy came under deadly and accurate strafing and bombing attack. A goodly number of confirmed hits were reported on the designated target areas as well as many "probables".

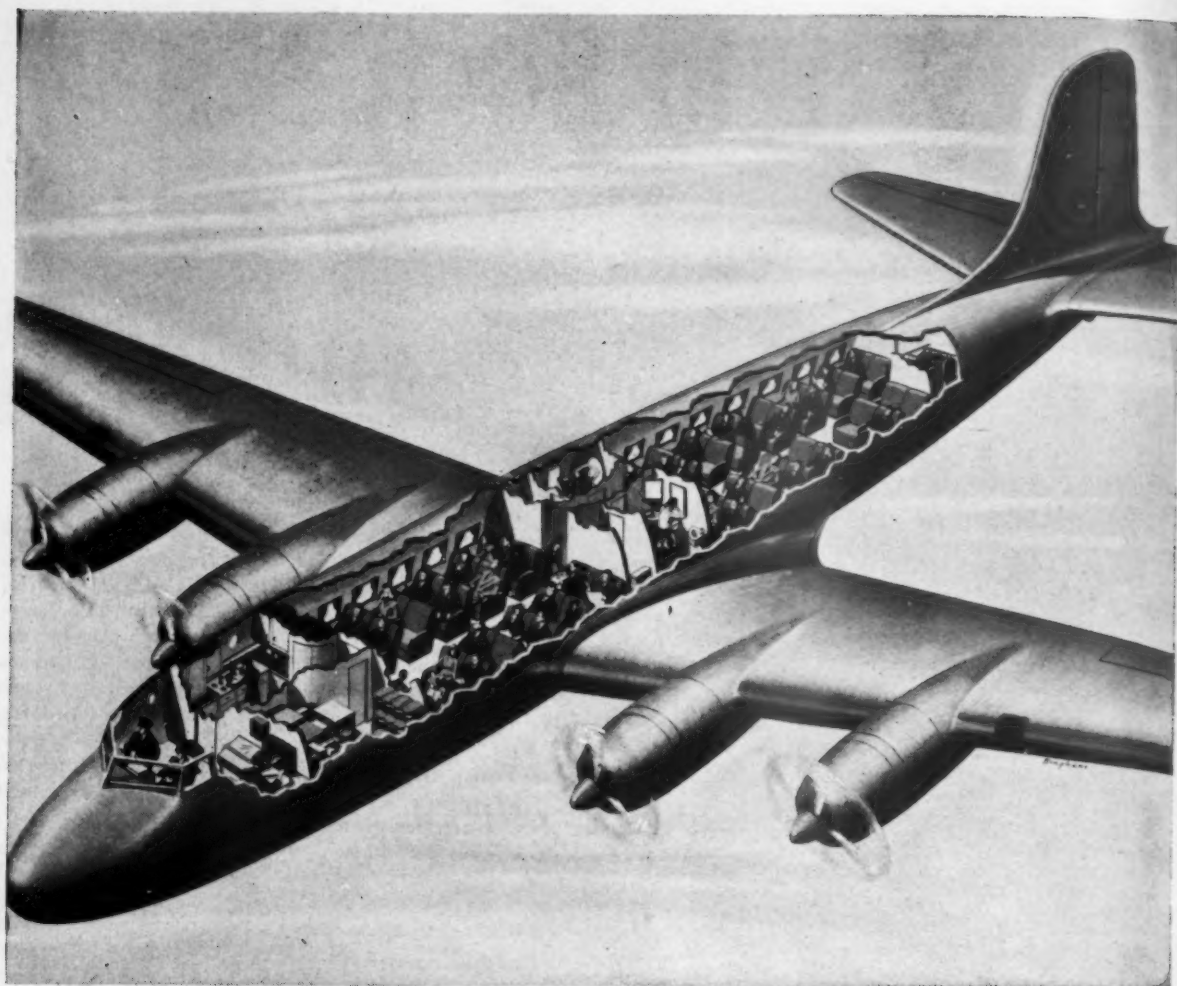
There aren't any Japs on Attu now. Edo-equipped Kingfishers could climb higher than the Rising Sun. And with the Kuriles only 650 miles away, the gallant crews of the scout planes with the "sea-going legs" can be counted upon to point the way direct to the heart of Japan.



EDO FLOAT GEAR
Serves the United Nations

EDO AIRCRAFT CORPORATION
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COLLEGE POINT, L. I., N. Y.

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You'll find new comfort in the clouds in the *Age of Flight*

No matter how you travel in wartime America today, you won't find the comfort which public carriers would like to offer. All transportation facilities are overtaxed by an unprecedented volume of traffic. Today, for example, 85% of United's business is of a war-time nature.

But United is planning ahead, preparing an expanded and even finer air service for the future. And all of us are looking forward to the day when more people will become acquainted with the comforts of air travel. Nowhere is greater promise of new travel comfort to be found than in the coming Age of Flight.

After victory, United will put into

service new, 44 to 50 passenger Mainliners — huge, four-engine planes with a speed of 220 miles an hour. They will carry a payload — passengers, mail and cargo — four times as great as today's largest commercial ships, and will fly coast to coast in 11 hours!

You will find comfort never before known to air travel. You will enjoy even finer dining service, sleep in soft, restful, roomy berths. There will be commodious dressing rooms; big, cushiony seats for day travel.

This is not a far-off dream, at all. Planes identical to these luxurious Mainliners of tomorrow were designed for United before the war. Without major structural changes, these

planes were turned over to the U. S. Army Air Transport Command and are today proving their dependability and efficiency all over the world.

Improving the service for its passengers, at fares that are continually being lowered, has always been a chief concern of United Air Lines. In the post-war era, we will be able to offer ever greater comforts and conveniences.

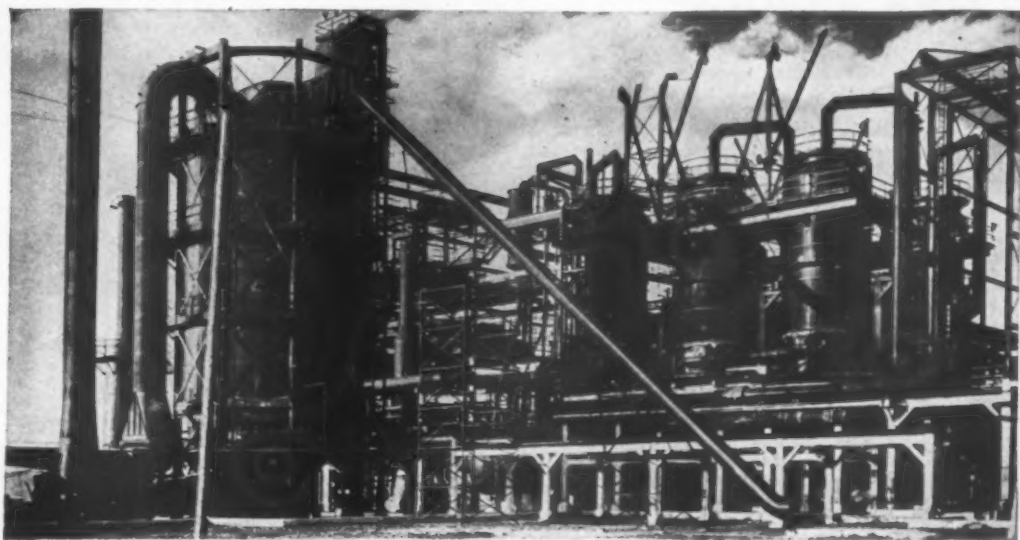
★ Buy War Bonds and Stamps for Victory

UNITED
AIR  **LINES**
 THE MAIN LINE AIRWAY

To Fly 1000 BOMBERS...



OUR BOYS can fly these four-engined bombers faster, higher and carry more bombs because they use 100-Octane Aviation Gasoline, the most powerful gasoline in the world.



IN NEWLY COMPLETED, modern refinery units Sinclair produces each day enough 100-Octane gasoline to fly 1000 four-engined bombers on a bombing mission. Today, all of Sinclair's aviation gasoline goes to war. After the war this fine fuel will be available for commercial and private planes.

BUY MORE WAR BONDS AND STAMPS

SINCLAIR



FAST FREIGHT and mail will cross the oceans via the Martin 170-22. Ideal for transportation of perishable foods, using high-altitude cold for refrigeration.

The MARTIN MARS affects your POSTWAR PLANS!

IN the Mars flying boat, airline operators will have a successful type thoroughly tested in overocean transportation. She's the most efficient airplane yet built, per pound of material used, per horsepower, per gallon of fuel, and has the lowest ton-mile cost.

Start revising your postwar plans! For these are no visionary, far-distant ships. They are commercial versions of the Martin Mars. The original Mars is now in regular trans-Pacific service with the Navy, while 20 larger 82-ton Mars Navy transports are under construction. The plane of tomorrow is flying today!

At war's end, Martin production lines will be tooled and manned for fast delivery. If the industry is permitted to set aside funds for such postwar construction and employment, American aviation will be first in peace as it is in war.

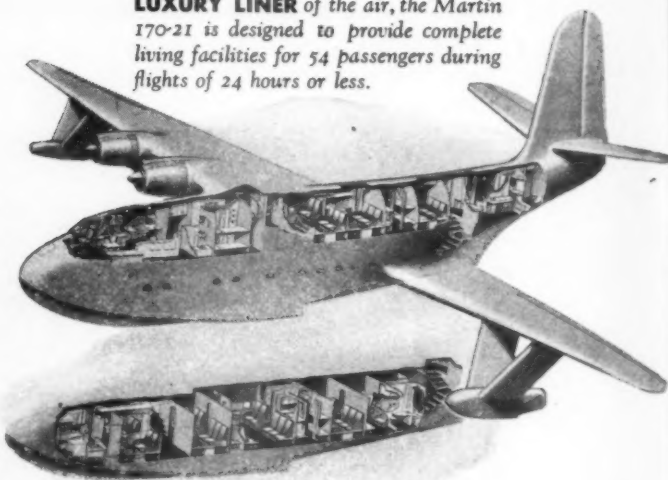
THE GLENN L. MARTIN COMPANY, BALTIMORE 3, MD.
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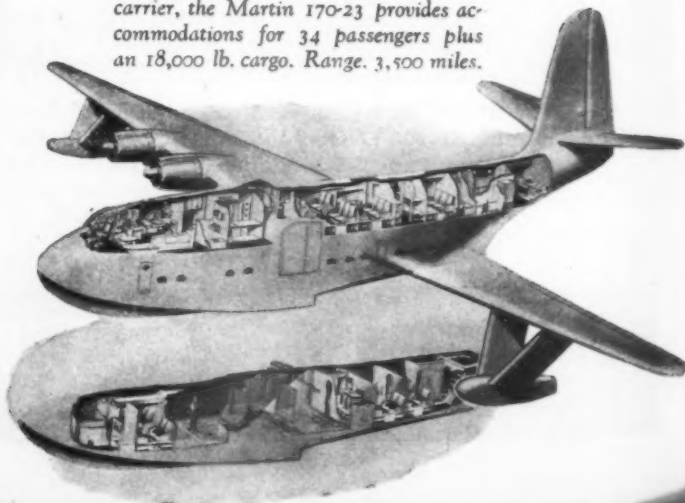
Builders of Dependable Aircraft Since 1909



LUXURY LINER of the air, the Martin 170-21 is designed to provide complete living facilities for 54 passengers during flights of 24 hours or less.



COMBINATION cargo and passenger carrier, the Martin 170-23 provides accommodations for 34 passengers plus an 18,000 lb. cargo. Range, 3,500 miles.



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Policy on Surpluses Taking Shape

Number of Planes for Disposition Jumps To 8,958; Harding Gets House in Order

LONG-RANGE PLANS FOR THE DISPOSAL of thousands of U. S. surplus airplanes were rapidly taking shape last fortnight, with two major developments highlighting the picture in Washington:

- The number of surplus planes available for disposition jumped to 8,958 not counting 2,492 already disposed of by CAA.
- Lt. Col. William Barclay Harding, newly-named director of Surplus War Property Administration's Aviation Division, proceeded to put his house in order to handle the rush of surplus equipment.

6,000 More Aircraft Not Needed for War

Six thousand government-owned aircraft, including many small training gliders, were declared surplus by the War Department last fortnight, bringing to 11,450 the total number of surplus craft not needed in the war effort. Of the new surplus list, only 50 per cent are suitable for public use, according to Col. Harding.

A total of 5,450 planes had been previously declared surplus following termination of the War Training Service program. Of this number, most of which are suitable for public use, 2,492 have been sold through regional offices of the Civil Aeronautics Administration. Most of the WTS planes were commandeered from private owners early in the war.

A Few 'Light Bombers'

In addition to the training gliders, some of them converted Pipers, the 6,000 craft includes a few obsolete single-engine Northrops, which have been described as light bombers because they have bomb racks, and one twin-engine Lockheed Hudson. No fighters are included. The bulk of the new lot are Wacos, Stinsons, Fairchild, Porterfields, Rearwins, Cessnas, Taylorcrafts, Beechcrafts, and Aeroncas. Col. Harding described 50 per cent of the craft as "junk".

Of the 2,492 WTS planes sold by CAA, 116 were sold in one day—July 7. Twelve hundred were disposed of during June. Frank Ronan, vice president of Defense Plant Corp., the RFC agency which purchased the planes, estimates the Government cost of the total 11,450 at more than \$50,000,000, and says the disposals are returning an average of 61 per cent of the original cost.

RFC and FEA to Direct Sales Here and Abroad

In his role as director of the Surplus War Property Administration's Aviation Division, Col. Harding will be an arbiter rather than a czar, he made it clear in an interview last week.

He will direct the disposal of aviation surpluses abroad through the Federal Export Administration and in this country through the Reconstruction Finance Corp. He will execute such directions "by conciliation whenever possible", through the medium of a working committee soon to be appointed by Surplus War Property Administrator W. L. Clayton, but in the event conciliation fails he will have final authority.

Clayton is expected to appoint the committee within the next few weeks from representatives of the Army, Navy, State Department, Department of Commerce, Civil Aeronautics Board, Federal Export Administration, and Reconstruction Finance Corp.

Col. Harding revealed that his job was set up as an adjunct of the Munitions Assignment Committee (Air), the joint British-American surplus disposal group which already has allocated some planes, of no worth to the war effort, to foreign airlines. This committee was eager to be relieved of duties having no bearing on the war, many of them requests by airlines for transport planes.

"We will handle the increasing number of requests separately during the heavy wartime demand for transports," he said. "The Federal Export Administration is preparing to conduct market research to ascertain which foreign airline deserves more planes. However, when the war situation changes and there is less demand, we will allocate in bulk lots—so many for farm use, so many for industry, etc."

Col. Harding will set up sales policies, reconcile foreign policies with domestic policies, and set up price schedules. He will have assistance from Commander Roger Hyatt, a pre-war banker recently

assigned to FEA from Navy Procurement to direct the overall surplus disposal program of that agency; William Brinkerhoff, director of FEA (Air) whose job during the war has been to see that Air Transport Command planes returning to this country from flights abroad have brought back vitally needed strategic materials; and William Pawley, former head of Hindustani Aircraft Co., India, who has been retained by FEA as a consultant on aircraft disposal.

It will be Col. Harding's policy not to assume physical custody of planes since none of the disposal agencies have facilities for storage. He revealed, however, that the 60 airports built by Defense Plants Corp. for the wartime pilot training program will be used to store or exhibit the slower moving types of plane. The more popular types will be delivered to the purchaser on allocation, except that after the war these types will be taken to established plane markets near large cities for showing and sale. The latter disposal program will not go into effect for a year or more, he believes.

CAA Aiding Harding

In addition to utilizing the already existing facilities and administration of RFC and FEA, Harding has asked the Civil Aeronautics Administration to continue disposal of the 5,000 planes purchased by DPC for the War Training Service program through its regional offices.

The heaviest demand at present is for utility-cargo types of plane, such as Stinsons, Beechcrafts, and Wacos, and the small Taylorcrafts, Pipers, and Aeroncas, he said.

Col. Harding predicts that the committee on surplus disposal headed by CAB Chairman L. Welch Pogue may become a permanent adjunct of the Surplus War Property Administration because of the "excellent" advice it has rendered Clayton.

Grumman Lightplane

Grumman Aircraft Engineering Corp., Bethpage, L. I., has built an experimental lightplane that is causing considerable hangar talk in the east. It is said to be the cleanest, most attractive and speedy looking lightplane ever to touch airport sod. It has a 125 h.p. engine, it is said, with speed of up to 185 miles an hour—exceptional for a small plane. Wing area is quite small. It's a two-place side-by-side. It is apparently designed for private flying by combat pilots who want something sporty and highly maneuverable—it's not for the family trade. Postwar output and plans are not known.

Airlines and Army Unable To Agree on Plane Prices

Formula For Re-sale of Transports Turns Into Stumbling Block

THE AIRLINES AND THE ARMY virtually have reached an impasse in their attempts to agree upon a formula for the re-sale of air transports being returned to the airlines for civilian use.

Several plans have been considered by representatives of both groups and after extensive discussions, they have been scrapped. The latest proposal has been put forward by the Army, and airline executives are now debating whether to accept the formula or take an appeal to higher Army authorities.

In its most recent proposal, the Army offered the Douglas DC-3 type airplane to the airlines at a standard average price of \$75,000 each and to allow the airlines a ceiling price of \$45,000 per plane for overhaul and reconversion. The overhaul and reconversion expense would be subject to Army audit and approval, based on the reasonableness of the charges but in no event would an amount in excess of \$45,000 be allowed.

CAB Formula Rejected

Airlines representatives have suggested to Army officials that the ceiling price on overhaul and reconversion be fixed at the difference between the \$75,000 and the residual values of each particular plane involved, based on a formula originally prepared by the Civil Aeronautics Board which was used when the Army first purchased the planes from the airlines. Army officials have not indicated whether such a modification would be acceptable.

When the Army Air Forces began taking transport planes from the airlines in

1940, the price paid the airlines was based on a formula prepared by CAB. It was generally understood that this same formula would be used when the Army resold them to the airlines, but the Army, it has been learned, decided to use a new formula.

The CAB formula used in the sale of planes by the airlines to the Army was along the following general lines:

1. Hulls and additions. Original cost, less depreciation computed on the basis of a 5-year life and a 20% residual value, plus a "bonus" of 25% of the original cost.
2. Engines. Same as hulls, except that the "bonus" was 10% of original cost.
3. Propeller hubs. Same as engines.
4. Propeller blades. Original cost, less depreciation computed on the basis of a 5,000-hour life and no residual value, and no "bonus."
5. Radio equipment. Original cost, less depreciation computed on the basis of a 3-year life and a 25% residual value, plus a "bonus" of 25% of the original cost.
6. Spare parts. Unused parts at original cost; used and reconditioned parts at 50% of original cost.

Under resale to the airlines, it was proposed that the same formulae would apply except with reference to this one principal modification: 1. In the case of equipment having a residual value of more than 10% under the formulae, depreciation has been continued at the same rate down to a total value of 10%. This would mean, taking hulls as an example, that depreciation had been permitted to "eat up" the "bonus" and half of the residual value originally set.

Two other suggested modifications dealt with new equipment which the Army might have supplied in connection with its operation of the planes.

When the Army rejected the CAB plan, it is understood to have suggested a formula whereby the airlines would pay an average of \$78,680. This theory was based on the remaining usefulness of the air-

plane in presentday airline operations rather than using the historical cost of the plane as the basic starting point, and then depreciating it in accordance with the CAB formula.

Under this formula, the average price of hulls, engines and hubs was \$115,150. The date of purchase from the manufacturers was fixed as May 1, 1940. Life of this equipment was projected at least three years beyond May 1, 1944. Residual value, at the end of the useful life of hulls, engines and hubs, was fixed at 10%. Depreciation was recomputed upon the depreciable amount of the original cost—\$103,635—covering a seven year life on a straight line basis. The Army said that adjustments would be made to compensate for the somewhat lower prices which the Army paid when it took the planes because of the use of a higher depreciation rate.

Further the Army formula provided that short-lived equipment would be deemed to have an average value based upon 50% of the original cost. A ratio which was in the plane when the Army took over would be classed as fully depreciated when the plane was returned to the airline. The formula also provided that there should be added to the sales price of the planes the additional payments made by the Government representing replacement value as it was felt the airlines would not have occasion to repurchase in the open market the planes restored to them under this program.

Counter Plan Proposed

It was under this Army formula that the price on an average Douglas DC-3 would be \$78,680. A maximum allowance of \$27,500 was to be permitted for reconversion costs.

The airlines reviewed this proposal, agreed to accept it provided the average date of the purchase of the 66 DC-3 types sold to the government in May, June and July of 1942 was fixed as Feb. 1, 1939 rather than May 1, 1940 as the Army formula suggested. The representatives of the airlines offered to furnish proof as to the authenticity of the purchase dates. In addition, the average price claimed to have been paid by the airlines was \$114,330 not \$115,150 as stated in the Army formula.

Re-figured on this basis, the airline representatives found that the standard price for any DC-3 type aircraft would be \$55,170, not \$78,680 as Army officials had computed the cost. From the \$55,170, the costs of reconversion, not exceeding \$27,500, were to be deducted.

The Army refused to accept the computations made by the airline companies based on the earlier dates of purchase and then put forward the new formula wherein the standard re-sale price was set as \$75,000 and reconversion costs set at not to exceed \$45,000.

Major E. M. Weld, chief of the Air Line Contracts Office, Army Air Forces, Headquarters Materiel Command, Wright Field has represented the Army Air Forces in most of these conferences. He was formerly a public counsel for the Civil Aeronautics Board. George W. Burgess, assistant Secretary of Commerce, R. G. Lochiel, of Pennsylvania-Central Airlines Corp. and A. W. Dallas, D. W. Markham, S. G. Tipton and E. F. Kelly, all of the Air Transport Association, are understood to have taken part in the discussions from time to time.



RUSSIANS VISIT PAA BASE— Members of the Russian Air Mission to the United States are shown during their recent tour of Pan American Airways' Atlantic Division base at La Guardia Field. Left to right—Maj. Gen. N. I. Petrov, Maj. Gen. P. F. Berezin, Division Manager John C. Leslie of PAA, Maj. Gen. A. A. Avseevich, and Maj. Paul Asseev, assistant military attache for air at the Russian embassy in Washington, who accompanied the group as interpreter.

Airparks Popular

The term "airpark" is catching hold like wildfire in many sections of the country, especially in the mid-west. Literally hundreds of communities that have been utterly confused as to what to build in airports, and who shudder at the thought of another bond issue, are taking up the airpark program in a big way because in most instances these little sod landing areas can be built without any bond issue financing. A 24-acre tract is sufficient for an 1800 foot runway 300 feet wide, with grading the major cost item. In many cases the airpark can be built in connection with public parks or highway programs. The idea that two or three airparks can be built for the cost of one airport also is appealing to politicians who can satisfy constituents in all parts of town.

Roosevelt Upholds Federal Rejection of Lowest Bidder

The right of the procurement Departments of the Government to exercise their judgment in awarding a competitive bid contract and not be bound to make the award to the lowest bidder was sustained last fortnight by the President.

The President vetoed legislation which would have given the Zephyr Aircraft Corp., formerly Lenert Aircraft Corp., of Pontiac, Mich., the right to take its damage case against the War Department, to the Court of Claims for alleged failure to award the contract for primary trainers to the lowest bidder.

The President's veto contended that the legislation would establish an unsound public policy. His action appeared to establish a precedent under which the views of the procurement Departments on such matters as prospective performance would be the controlling factor in awarding a contract, rather than the sum of the bid.

The case arose over a War Department competition which opened July 7, 1939. The competition called for design data and maximum prices to be charged for primary training planes in various lot quantities and did not require the submission of a physical plane with the bid. Bids were received from 12 companies. Lenert was the lowest bidder. Three companies were declared winners: Stearman Aircraft Co., Brewster Aeronautical Corp., and St. Louis Aircraft Corp. A contract was awarded to Stearman.

Bids were analyzed by a board of officers and the particular ineligibility of Lenert, it was contended by the War Department, was due to "insufficient proof of capability of meeting performance, crew, equipment, and furnishing requirement specified in the applicable Air Corps specifications, and capability of airworthy flight at the gross weights provided."

Following are some of the statements of fact by Ross H. Pusey, president of Zephyr, as a result of which the Claims

Final Step in Streamlining Chamber is Selecting Head

Permanent Manager Sought; Two Councils Become Major Units

REORGANIZATION of the Aeronautical Chamber of Commerce, spurred by the necessity of having a strong agency to represent the aircraft manufacturers in the problems of wartime contract termination and conversion to a peacetime basis, has been completed so far as the administrative pattern is concerned.

Organizational streamlining, as recommended by John C. Lee who recently was drafted to Washington from his post as manager of the Aircraft War Production Council on the West Coast to straighten out the Aero Chamber's activities and revive it from its moribund condition, was given final approval last week at a meeting of West Coast aircraft officials in Los Angeles. Previously similar approval had been voted by East Coast manufacturers.

The one major step remaining in the reorganization program is the selection of a general manager of high caliber who will head the Aero Chamber at its Washington headquarters. This is scheduled to be done by Sept. 1 when Lee completes his three months of leave from the AWPC and turns the revitalized organization over to a new leader.

Selection of a manager has been the principal snag in the Aero Chamber reorganization program for the past year. Several capable men have been proposed, but these plans have never jelled and the selection of a "superman" to head the organization still is undetermined. However, there are indications that at last agreement will soon be reached on a man to head the ACCA and provide a strong voice in matters of reconversion and post-war problems of the aircraft manufacturing industry.

In the first major phase of ACCA reorganization last week, the Aircraft Manufacturers Council and the Personal Aircraft Council emerged as major operating units. The Aircraft Manufacturers Council divided into western and eastern regional units headed respectively by Harry Woodhead, president of Consolidated Vultee Aircraft Corp., and R. E. Gillmor, president and general manager of Sperry Gyroscope Co., Inc., was decided upon two months ago. The Personal Aircraft Council is a development from the earlier Personal Aircraft Committee of ACCA and will continue under the chairmanship of Joseph Geuting to carry out an extensive program for increasing utility of the light airplane.

Announcement of the general reorganization pattern was made by Woodhead, following approval by East and West

Committees of both the House and Senate recommended that the firm be given an opportunity to take its case to court: Bids were opened at Wright Field, July 7, 1939, at which Mr. Lenert was present, having posted a \$60,000 bond; Lenert Aircraft Corp. was the lowest bidder by some \$3,000 per plane; contract for the first 100

Coast AMC executive committees of the report presented by Lee.

The AMC pattern will follow closely the setup of the Aircraft War Production Council, emphasizing regional action of company presidents and advisory committees. Each regional executive committee will meet monthly and action agreed upon by both groups will become the national aviation policy of AMC.

Offices of the Western Aircraft Manufacturers Council will be established at 7046 Hollywood Blvd., Los Angeles. Appointment of a West Coast manager—a newly created paid position—will be announced shortly.

The eastern AMC will have as its manager the national president or general manager of ACCA yet to be selected and to be headquartered in Washington.

Former departments of the ACCA in Washington are being reorganized as service bureaus in the fields of economic matters, industrial relations, technical and traffic problems, and public relations. The Economic Bureau embraces the former Economic Development Department (previously headed by John Howard Payne, now resigned), Research and Statistics, Legislation and Information Departments. These bureaus will serve the AMC and the Personal Aircraft Council as well as the general membership not identified with either council.

New Committee Structure

The committee structure is being simplified and the number reduced. The following AMC committees were authorized: contract termination, accounting, surplus aircraft, aircraft engines and components, national defense, commercial aviation, research and statistics, public relations, and industrial relations.

In addition, the following committees of ACCA as distinguished from AMC committees were authorized: airplane technical, engine technical, propeller technical, accessory and equipment technical, traffic, and finance. The committees will meet regionally wherever possible.

Pressing termination and reconversion problems were tackled first, with a contract termination unit being formed to act as liaison between the manufacturers and government agencies concerned with contract termination.

Three specialists were assigned to devote full time work to this unit in Washington and at Wright Field, Dayton, O. They are: J. K. Boyle, chairman, of Lockheed Aircraft Corp.; J. S. Van Lear, of Douglas Aircraft Co.; and R. D. Campbell, of Curtiss-Wright Corp. This unit is to be coordinated by the Chamber management and supervised by the Contract Termination Committee composed of chief company executives responsible for termination supervision.

planes (and later 400 additional) was awarded to the Stearman Co. for a somewhat antiquated biplane design contrary to advertisement; as provided in the bids, Lenert was entitled to a hearing as being unjustly deprived of an award and requested a hearing, which, however, was denied.

June Production Drops, But Wilson Sees 'Bright Spot' in B-29 Output

A TOTAL of 8,049 planes was produced in the United States in June, a drop of 9.5 per cent from the May figure, Charles E. Wilson, chairman of the Aircraft Production Board, revealed July 3.

Wilson pointed, however, to a "bright spot in our production program, the fact that we exceeded the scheduled output of four-motored planes of all types."

"One B-29 plant exceeded its quota, which obviously points our production in the right direction," he said. "Only one B-29 plant was below schedule."

He attributed part of the overall drop in production to the shorter work month, and part to the failure of three companies, producers of smaller types of plane, to meet schedules "because of unusual circumstances."

The Curtiss-Buffalo plant failed to complete 63 C-46 cargo planes, Wilson revealed. He termed this a "regrettable, but not serious" circumstance. He expressed the hope some of this deficiency may be made up in the next few months. The next largest drop in production of combat types involved a Navy fighter, he added.

Additional changes and improvements in super-bombers "cost us some" for the month, he added. He termed the B-29 "up to specifications, as may be witnessed by its performance."

Douglas-Chicago Excels

The APB chairman revealed that the Douglas-Chicago plant exceeded its production of C-54's by 15% during June.

One producer of trainers fell 200 planes below schedule during the month, having difficulty with parts, many of which had to be re-worked, but this deficiency will be made up during the next few months "in addition to scheduled output," Wilson promised.

He termed the production drop in June "not serious because nothing basic was involved." He did not blame manpower shortage, but admitted "we will have a job to do to keep manpower in our plants."

"Our manpower troubles are not behind us by any means," Wilson warned. "We're down to bedrock at our feeder plants. We do not anticipate curtailments in the production from the standpoint of dislocation of manpower, but there is a constant shifting up and down." He said production on an overall basis followed the pattern of the past several months, with an output in terms of airframe weight of approximately 100 million lbs., which compared with the record output in May of 102½ million lbs.

"Reduced to pounds of airframe pro-

duced per working day, the past three months have been almost equal, at just over 3,800,000 lbs. per working day," he said.

Committee Named For Research On Aircraft Materials

To coordinate research and development in the increasingly important field of aircraft materials where progress has been speeded immeasurably by the war program, the National Advisory Committee for Aeronautics last fortnight announced the organization of a Committee on Materials Research Coordination.

Efforts of the committee will be concentrated on making the most effective use of present aircraft research facilities—both among Government agencies and in the industry—and to provide a dynamic program for future development.

Formation of the committee was requested by Maj. Gen. O. P. Echols, Assistant Chief of Air Staff, AAF, and Rear Admiral D. C. Ramsey, Chief of the Navy Bureau of Aeronautics.

Dr. George W. Lewis of NACA was appointed chairman of the committee at its first meeting. Others attending the initial session were Dr. Jerome C. Hunsaker, chairman of NACA; J. B. Johnson, Chief of Materials Laboratory, AAF Materiel Command, Wright Field; Capt. J. E. Sullivan, Chief of Equipment and Materials Branch, Navy Bureau of Aeronautics; N. E. Promisel, Chief Metallurgist of Bureau of Aeronautics; A. A. Vollmecke,



CLIMBING FAST—In its war role the Sentinel, the 'Flying Jeep,' built by the Stinson Division, Wayne, Mich., of Consolidated Vultee Aircraft Corp., climbs almost vertically after short take-off run. Designed to be the 'eyes upstairs' of the Army ground forces, the Sentinel can hover at speeds below 45 miles an hour while directing artillery fire or the movement of tanks or troops.

Aviation Calendar

July 17-18—Air Traffic Conference, regular meeting, Denver.

July 24-25—Airport Users Conference, sponsored by NAA, Hotel Statler, Washington.

July 27-28—The Institute of Aeronautical Sciences, annual summer meeting, University of Southern California, Hancock Auditorium.

Aug. 1-2—Eastern Division meeting Airworthiness Requirements Committee, New York; Western Division meeting, Los Angeles.

Aug. 24-26—North Carolina Wing, Civil Air Patrol, first State Aviation Week and convention of State Aeronautical Commission, Charlotte, N. C.

Sept. 4-6—Annual meeting Aero Medical Association, Hotel Jefferson, St. Louis, Mo.

Oct. 5-7—SAE National Aircraft Engineering and Production meeting and engineering display, Biltmore Hotel, Los Angeles.

Nov. 13-14—National Association of State Aviation Officials, annual business meeting, Oklahoma City.

Nov. 15-18—Second National Aviation Clinic, Oklahoma City.

Dec. 4-6—SAE National Air Cargo Meeting, Hotel Knickerbocker, Chicago.

Jan. 8-12—1945 SAE Annual Meeting and engineering display, Book-Cadillac Hotel, Detroit.

Civil Aeronautics Administration; Clyde Williams of Batelle Institute representing the Office of Scientific Research and Development and the National Research Council; Dr. Maurice Nelles of the WPB Office of Production Research and Development, and Lt. O. C. Roehl, Navy Office of Procurement and Material.

Besides reviewing aircraft materials research projects in the U. S., the committee will keep in close touch with developments in foreign countries. It will be concerned with all kinds of materials used in aircraft and with processes concerned with their fabrication.

Councils to Be Represented

Representatives of the aircraft industry, the aircraft war production councils and various research groups will be added to the committee in the near future.

NACA listed the main functions of the committee as:

A. To collect, analyze and disseminate information on aircraft materials research and development. In this connection the committee will compile, distribute, and maintain a list of projects currently being investigated in the aircraft materials research field. The list will be suitable for ready reference and will include projects under way in the Army, Navy, NACA, CAA, OSRD, OPRD, in industry, and in other research institutions.

B. To arrange to receive information concerning pertinent investigations bearing on specific problems and to consider and recommend new projects outlining the scope and suitable locations for conducting the needed research.

C. To administer the proper distribution of aircraft materials research reports.

25th Anniversary of Air Mail

In Colombia Being Celebrated

Columbia is observing the 25th anniversary of the first air mail flight in that country. A small sack containing 600 pieces of mail was carried between Barranquilla and Puerto Colombia on the initial flight. Today, more than 22,000 pieces of mail are transported over Colombia by Aerovias Nacionales de Colombia alone.

NASAO Lists Recommendations; Letters Sought on Registrations

THE NATIONAL ASSOCIATION of State Aviation Officials has issued a statement of recommended state policies.

The consensus expressed at a recent meeting was that the states should avoid as far as possible any duplication of functions that should rightfully be those of the federal government. It was agreed that the certification of airworthiness of aircraft and competency of pilots should be strictly a federal function. In this process the federal agencies have on record the location of each and every aircraft and pilot. If some accurate means could be found by which the CAA could periodically give to each state data on the aircraft and pilots in that state, then the need for state registration would be eliminated.

It was generally agreed that the states should keep a record of the pilots and aircraft (and their use) within their borders for (a) quick identification as an aid to law enforcement; (b) to assist in the study, location and planning of landing facilities in the state, and (c) for other uses similar to those for which the registration of motor vehicles and drivers are employed (excepting tax or revenue producing purposes).

To this end Wm. L. Anderson (Pa.) of the legislative committee met with William A. M. Burden, Assistant Secretary of Commerce, C. I. Stanton, CAA Administrator and others. They agreed that the CAA records should be made available to the proper state agencies and they agreed to recommend that monthly up-to-date records be furnished the states.

In order for them to set up the mechanics for this operation however, it will be necessary for them to justify the expenditure involved with the Bureau of the Budget. They would like to hear from the several states on the matter.

Each state is therefore being urged to write to Burden requesting that they periodically provide this information to the properly authorized state agency and stating the particular reason for wanting it. It should be clearly understood, should this information be given the states, that the state agency would use it for its own public purposes only, and would not make the information available to any person, firm or corporation for commercial purposes.

The NASAO statement follows:

AIRPORTS:

The suggested policy with respect to airports is divided into three sections (1) Airport planning and construction; (2) control and operation; (3) airport zoning, or more properly the protection of approach and turning areas of airports.

1. Airport planning and construction
 - a. The development of a national airport plan is essential and should be consummated by coordination of activities of State and National aviation agencies.
 - b. The federal government should establish the aeronautical standards and classifications of all airports used for commercial or public purposes.
 - c. All airports used for commercial or public purposes should be owned and operated by municipal, state and/or private enterprise.
 - d. The State should have direct supervision over the design, location, construction and maintenance of all airports and landing

areas used for commercial or public purposes.

- e. Licensing of airports should be at the State level.
- f. Federal assistance in financing the construction or improvement of airports for commercial or public use as a part of the state-federal airport plan should be by means of allocation of funds to and through properly authorized state agencies.
2. Airport control and operation
 - a. Operation, control and management of airports used for commercial or public purposes should be vested in the state, municipality, and/or private owner enterprise.
3. Airport zoning
 - a. The protection of approach and turning areas in the air space adjacent to airports or landing areas should be accomplished through the exercise of the state's right of eminent domain and under local police powers. These zoning regulations should be based on recommended uniform state zoning codes.

SAFETY REGULATIONS

1. The certification of the air-worthiness of aircraft and of the competency of air men should be a federal function.
2. Federal safety regulations should be incorporated into State aviation codes, to permit cooperation of State and municipal enforcement agencies with federal authorities.
3. The State should have the right to enforce such additional safety regulations of a local nature as are not inconsistent with federal safety regulations.

TAXATION

1. The State should have the right to levy a reasonable and uniform tax on aviation fluids. Funds derived from such levy should be devoted exclusively to aeronautical purposes.

SPECIAL LICENSING POWERS

The State should have the power to con-

B-29: 'Little Tactical Plane'

A New York columnist asked Maj. Alexander de Seversky whether the B-29 Superfortresses measured up to the superplanes he proposed in his "Victory Through Air Power." Seversky shook his head and said: "Not at all. Compared to what I have in mind, the B-29's are just little tactical planes."

control by license aviation schools, aircraft sales and maintenance agencies, flying clubs, airport managers, fixed base operators, airports, aviation facilities and air shows or exhibitions.

INSURANCE

The State should have the power to control by contract or any other means, through existing state insurance commissions, all matters of aviation insurance.

INTRASTATE AIR COMMERCE

The State should have the power to license and control intrastate air commerce and air carrier operations by regulations which shall not be inconsistent with federal regulations of inter-state commerce.

JUDICIAL REVIEW

There should be adequate provision in all state aviation codes for uniform practice in the matter of public hearings and investigations on all matters where the public interest is involved, and for prompt judicial review of rules and regulations and orders enforced at the state level.

REGISTRATION OF AIRCRAFT AND PILOTS

Uniform and reciprocal methods of registration of all aircraft and air men should be established by the states. (This will be omitted in final recommended policies if satisfactory arrangements can be worked out with CAA to provide the state with accurate information from their records.)

DEFINITIONS AND NOMENCLATURE

Definitions and nomenclature in State Aviation Codes, Federal Legislation and industry should be uniform.

CAB 'Grounded' by Lack of Planes, May Buy 13 Two-Place Stinsons

MANY FEDERAL AGENCIES have their own private transport planes for use of top personnel while traveling on Government business.

Ironically, one of the agencies that does not have this speedy transportation at its disposal is the Civil Aeronautics Board, the agency which is responsible for the development of a sound and efficient air transportation system in this country. Board members, must depend on public transportation—some times surface accommodations—while traveling in connection with their official duties. Recently L. Welch Pogue, chairman of CAB, had to give up his place on an airline plane to a priority passenger when a stop was made at a midwest city.

The fact that the Board is virtually grounded has been the source of some comment in aviation circles, especially with reference to the Board's accident investigators. The Board long has felt that accident investigators should be provided with small planes to enable them to get quickly to the scene of air accidents. The time element is especially important for wind and rain or changing temperatures can destroy much of the

evidence which might be valuable in assigning the cause of the accident.

For these reasons, the Board now has under consideration the purchase of 13 two-place Stinson L-5 Sentinels which would be assigned primarily for the use of its accident investigators. These planes were used by the Army for observation and reconnaissance work and because of their 185 horsepower and attendant ability to take off and land in small fields, it is believed they would serve admirably the purposes of investigators who must now depend on surface transportation in getting to the scene of accidents.

The Board believes that the Civil Aeronautics Act vests it with authority to purchase these planes but it can find no provision for maintenance and operation expense. Efforts will be made to work out the expense question with the Budget Bureau.

And at some later date, when the smaller transport types are available in great numbers, possibly the Board will give consideration to purchase of a plane that can be used by Board members while traveling on official business for the Civil Aeronautics Administration.

Stanton Proposes Giving Leeway To Plane Owner on Minor Repairs

THE OWNER of a private plane who likes to tinker with the engine or make minor changes or repairs in accordance with his own ideas will be given considerable leeway under the terms of a revision of requirements for maintenance and repair as proposed by Charles I. Stanton, Civil Aeronautics Administrator.

Stanton made the recommendations to the Civil Aeronautics Board late last month and if the Board adopts the proposed changes, the private owner will be granted about as much liberty in maintenance and repair work as the auto owner has always enjoyed.

The Administrator also recommended a new classification of "NP" for aircraft used for non-commercial purposes or for personal flying, which he said would relieve the private owner of restrictions similar to those now imposed on planes flown for hire under the "NC" classification.

These new regulations will be instrumental in promoting private ownership and use of aircraft, and encourage the owner and operator of such aircraft to assume greater responsibility. Stanton said.

Instead of inspection every 100 hours, the NP plane would be inspected once each calendar year by a certificated mechanic under the proposed recommendation. Certificated pilots of private grade or higher may perform routine maintenance and minor repairs and minor alterations to aircraft, aircraft engines, instruments and propellers on planes that are used exclusively for non-commercial purposes or for personal transportation. Major repairs and alterations must still be performed as at present by certificated mechanics, certificated repair stations or the manufacturers.

The personal aircraft owner need no longer keep a log book detailing the operation of his airplane. The annual inspection will be recorded only on an "Aircraft Operations Record." No changes are suggested in the regulations governing repair, maintenance and inspection of planes used in commercial service.

Discussing the proposal, Stanton said he believed: "The extension of responsibility to private owners for items which affect only their safety will not adversely affect the safety of the general public."

To achieve this, he explained, "It is

necessary to separate aircraft used for commercial purposes from those used for private purposes. The application of standard governing commercial aircraft to private aircraft has caused the private owner undue difficulties and expense."

The CAA also recommended that airplanes imported into the United States under an acceptable airworthiness certificate be granted the new NP classification without inspection by CAA inspectors as now required.

If the civil Aeronautics Board acts favorably upon the recommendations the new changes will become part of the Civil Air Regulations now being revised to encourage civilian aviation.

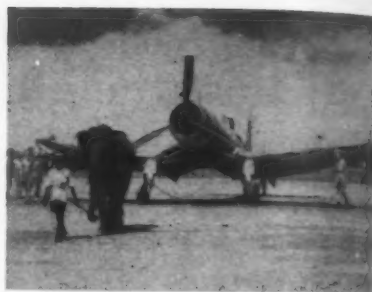
CAA Plans Rapid Certification Of Military Flyers

In an effort to avoid a bottleneck which may be expected at the close of the war, the Civil Aeronautics Authority has initiated steps which will enable military flyers to apply and receive private and commercial pilot certificates while they are still in uniform. It is estimated that possibly as high as 250,000 flyers may be affected by this procedure.

Charles I. Stanton, CAA Administrator, has proposed a revision of Section 20.129 of the Civil Air Regulations which would:

- (1) Permit the pilot to apply for the Certificate while still a member of the Armed Forces. It is believed that this change will tend to reduce the number of applications which may be expected at the end of the war.
- (2) Extend the time from six months to 12 months in which a member of the Armed Forces may make application after being on solo flying status as a rated military pilot. It has been found that the six-month period now provided is so short that it works a hardship in many cases.
- (3) Require that the certificate presented by a member of the Armed Forces show the type, class, and horsepower of aircraft which he has been officially rated as competent to pilot. The present regulation requires only a certificate from the appropriate officer in charge of flying indicating the aircraft the applicant has been found competent to pilot.

This proposed amendment has been circulated for comment throughout the industry



PRIMITIVE TRACTOR—An elephant tows a Vought Corsair fighter on an airfield in India.

and is to be displayed at Army Air Force posts.

The proposed amendment reads as follows: "20.129 Military competence. An applicant who is or was within the preceding 12 calendar months on solo flying status as a member of the Armed Forces of the United States or the Armed Forces of any government allied with the United States as a rated Military Pilot and has served as such with solo flying status for a period of not less than six consecutive months shall be deemed to have met the aeronautical knowledge, experience, and skill requirements of the Civil Air Regulations for the issuance of a pilot certificate of appropriate type and grade if:

- (a) The requirements for the Military Pilot Rating held are at least equivalent to the requirements of the Civil Air Regulations for the type and grade of pilot certificate sought;
 - (b) He passes the written examination on the Civil Air Regulations required of applicants for the type and grade of certificate sought; and
 - (c) He submits to an Inspector of the Administrator:
- (1) Documentary evidence that he is a member of the Armed Forces specified above, or that he has been honorably discharged or returned to inactive status, and
 - (2) A certificate from the appropriate officer in charge of flying showing the applicant's flight record as a Military Pilot and setting forth the pilot rating held by him, and the type, class, and horsepower of aircraft he has been officially rated as competent to pilot.

Aviation Gas Program Of United Nations Is 80 Per Cent Completed

Eighty per cent of the authorized projects in the 100-octane aviation gasoline program of the United Nations has been completed, Deputy Petroleum Administrator Ralph K. Davies of the Petroleum Administration for War announces. A total of 189 separate projects are involved in the program, of which 150 have been completed. Seven installations were built in 1942, 71 in 1943, and 72 have been finished so far this year. Of the remaining units, 25 are expected to be ready this summer and the balance during the fall.

N. C. Aviation Week

North Carolina's first State Aviation Week, scheduled for August 14 to 20 at Charlotte, will include a show of accessories and equipment, exhibition of post-war models of civilian planes, and a convention of airport operators and public officials, called by the State Aeronautical Commission.

Big Firms After Lightplane Market

At least two of the largest aircraft manufacturing companies in the industry are making hush hush plans to enter the lightplane field after the war. Together with Consolidated-Vultee Corp's Stinson Division, this makes three of the top builders to eye the small plane seriously.

One of the unnamed firms is after the so-called "Buick Market" with a family-type safe plane retailing for more than the average lightplane price before the war, and is going to spend plenty of money to put its product across. No announcement will be made for some time.

The other unnamed firm expects to use one of its branch plants for building small planes. Nothing much has been done in the way of detailed planning except the adoption of a company policy to be carried out when war contracts are terminated.



EVERY HELICOPTER RECORD BROKEN.. *with Franklin* POWER

ON MARCH 2, 1944, the Army's latest helicopter, the Sikorsky XR-6, powered by a 245 horsepower Franklin engine, flew non-stop from Washington, D. C. to Patterson Field, Dayton, Ohio. With Col. H. F. Gregory at the controls, this flight unofficially broke every existing helicopter record.

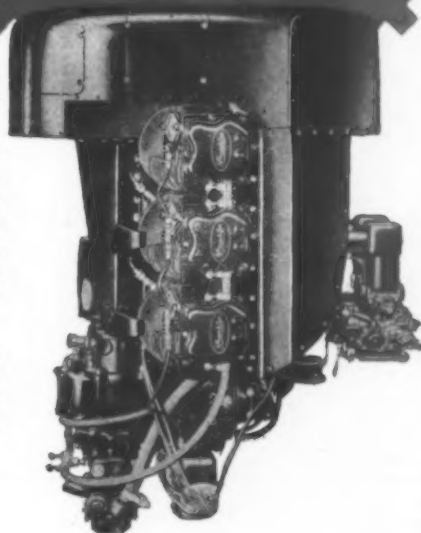
A new distance record was established—387 miles, non-stop. The XR-6 remained in the air 4 hours and 55 minutes—a new endurance record. It flew the Alleghenies at 5000 feet, carrying pilot and passenger—higher than any helicopter ever before had flown with such a load. Ground speed for the flight averaged approximately 80 m.p.h.

—new record cross-country time for a helicopter—made despite headwinds from 10 to 30 m.p.h.

Thus the XR-6 dramatically proved itself a practical flying machine, definitely out of the purely experimental stage. And thus another string of "firsts" was added to the long series already held by Franklin engines in the realm of power for flight.

Aircooled Motors Corporation engineers are even now planning new Franklin "firsts"—new and finer engines for your post-war aircraft. Specify *Franklin power*.

AIRCOOLED MOTORS CORPORATION
Syracuse 8, N. Y.



FRANKLIN ENGINE 6ACV-405, powerplant for the Army's newest helicopter, the Sikorsky XR-6, shown above.



Strong Airpower Urged As Aid to U.S. Prosperity

Plane Builders Advise Senators 'Profits' Are 'Bookkeeping Figures'

STRONG AMERICAN air power to preserve peace after victory and to aid national prosperity was strongly recommended July 10 to the War Contracts Subcommittee on Military Affairs of the Senate by leading aircraft builders.

The executives appeared before the Committee at the request of Senator James Murray, chairman, to answer questions relating to postwar reconversion and manpower demobilization.

Appearing before the Committee were E. E. Wilson, vice-chairman, United Aircraft Corp., and chairman of the Aeronautical Chamber of Commerce; Harry Woodhead, president, Consolidated-Vultee Aircraft Corp.; Joseph T. Gueting, Jr., vice president, General Aircraft Corp.; and J. Carlton Ward, Jr., president, Fairchild Engine and Aircraft Corp.

Among points cited by the manufacturers were:

1. Today American aviation in operation, engineering, design and production stands preeminent.

2. To maintain adequate air power, the United States must have a large air force, train youth to fly, maintain strategic air bases, encourage air transport and personal flying, and have a strong aircraft manufacturing industry with an alert research and development program.

3. With estimated production in 1944 at \$21,300,000,000 and 2,100,000 employees, the industry is a major part of the national economy and the nation's number one industrial demobilization problem.

4. Sound national policy calls for orderly termination of contracts, allowing for demobilization and reemployment needs of employees and avoiding dissipation of the industry's technological and manufacturing resources.

5. Surplus aircraft should be disposed of through a central government agency in an orderly fashion.

6. Despite tremendous volume, net income to sales of leading aircraft companies of only 1.8 per cent is the lowest of any of the war industries, and the entire net current assets of the industry would not equal one month's operating costs at present production rates.

"Continued supremacy in the air will bring progress, prosperity, and security in peace after it has helped win victory in the war," said Wilson.

"It will be the cheapest possible insurance against recurring wars," he continued. "The aircraft industry offers invaluable assets in its management, technological and manufacturing personnel and facilities.

"But unless positive measures are taken to retain a strong nucleus of these national assets, the American aircraft industry could be rendered ineffective in its future ability to serve the American people."

As to termination and cutbacks of government orders, Woodhead testified:

"The industry believes that once the need for given types of aircraft and equipment ends, contracts should be terminated promptly. This is sound policy from the taxpayer's standpoint, and it is sound policy from the industry's point of view. We don't want to produce planes to fill warehouses.

"Advance notice of terminations and cutbacks should be given as soon as possible by the services to aircraft manufacturing companies, and to other Government agencies to insure orderly and economical readjustment," he declared.

He then outlined the industry's recommendations for disposal of government-owned aircraft facilities, aircraft, and air fields.

Pointing to demobilization of manpower in post-war industry as "a national problem," Woodhead declared:

"The industry is in thorough agreement with the principles of adequate unemployment insurance."

He said the industry endorsed that part of the George-Murray bill providing transportation of war workers to other jobs or their bona fide residences at government expense.

Little In Dividends

As to the industry's financial condition, Woodhead said:

"The profits reported by the aircraft manufacturers during the war period are to a large extent bookkeeping figures. The ultimate profits, if any, can be determined only when all final settlements have been made. A very substantial part of the bookkeeping profits is still in the business. Only a small part has been paid out in dividends. But in spite of this conservative practice, working capital is meager in relation to the obligations of the business.

"The industry, while eager to do its full share during the conversion period, may have difficulty in meeting its present obligations, to say nothing of assuming additional burdens."

Air Research Vital

Of major concern to the aviation industry, as expressed by J. Carlton Ward Jr., Fairchild president, before the Murray Committee, is that provision be made for the continuation of technological development, with government, through the National Advisory Committee for Aeronautics carrying the burden of general research and with detailed development left in the hands of private industry. It was pointed out that France emerged from the first world war with the largest air force in the world but entered the present war with the weakest because research was limited.

Joseph T. Gueting, Jr., Chairman of the Personal Aircraft Council of the Chamber and Vice-President of General Aircraft Corporation, announced a Chamber program to urge construction of "airparks," "flightstops" and "air harbors."

"We need many thousand additional landing facilities, if there is to be large demand for personal aircraft," he declared.

Ward urged that present aircraft development contracts, offering promise of technological advances, be continued.

"A production program for the aircraft industry should be maintained to retain its ability to establish production processes and to permit the air forces to become familiar with the handling of such planes," he said. "Military research, design and development should be continued on a constructive basis through competitive private industry."

The manufacturers declared that first cutbacks should be in industries producing aircraft only during the war emergency; that problems of the creator of the original design should have first consideration when cutbacks are contemplated; and that other factors which should be weighed are present production

(Turn to page 70)

Bombs Cut German Oil Production to 30%, Arnold Says

Allied bombing attacks have cut output of German oil refineries to 30% with the result that gasoline is being rationed not only in the German ground forces but also in the air forces, AAF Commanding General H. H. Arnold said July 3.

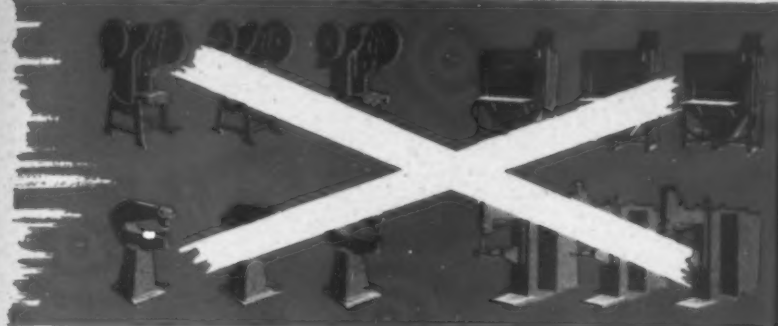
At his first press conference since returning from the Normandy and Italian fronts, Gen. Arnold painted a bright picture of Allied air superiority but at the same time warned that the air forces still would suffer losses from anti-aircraft guns plus what German fighters still opposed them.

Germany has 55 major refineries for synthetic and natural oil, including 14 for 100 octane aviation gasoline, and all of these have been hit with the result that production is down to 30%, Gen. Arnold said. He expressed the belief that Germany is now using reserve supplies, that consumption far exceeds production, and he added that if this continues, the Nazis "will be in a bad way."

Allied bombing forces formerly would meet from 200 to 600 Nazi planes, but now seldom as many as 100 meet them, he said. The Germans are being forced to decide whether to use their air force (1) against Allied bombing attacks, (2) against the invasion, whether to hold it against some situation that may arise in the future, or whether to maintain the air force merely to bolster homefront morale, he added.

Gen. Arnold said he was greatly pleased with the "coordinated effort" of land, sea and air forces in the invasion and in the movement up to the fighting front. The effort was "wonderfully well coordinated," he remarked. Air borne operations, he continued, were "wonderfully well executed" and transport losses were almost negligible. All gliders landed where they were supposed to land, he said, adding that "those glider fellows are wonderful."

THIS LOOKED PRETTIER



BUT THIS
SPEEDED
AIRCRAFT
PRODUCTION
35%

RYAN FLOW PRODUCTION

Ryan has brought the method of volume manufacture known as **FLOW PRODUCTION** to a high state of perfection. It is, at Ryan, the guiding policy of **ALL** production.

To speed war production of vitally needed planes and assemblies, Ryan has developed many outstanding time and money-saving techniques. Having demonstrated in wartime its farsighted production methods and specialized engineering ability, Ryan looks forward to the peacetime challenge to its ingenuity and skill.

THE PROBLEM

Aircraft plants formerly grouped in separate areas, often hundreds of yards apart, **ALL** similar machines—punch and drill presses, welding equipment, lathes, heat treat furnaces, process tanks, etc. Ryan's production engineers found that one particular part alone, an exhaust manifold outlet section, journeyed back and forth between these groups of machines nearly a mile before its completion.

THE SOLUTION

This waste of time and taxpayers' money in "backtracking" was eliminated by the simple expedient of *bringing the machine to the part*. At Ryan, machines were ruthlessly uprooted and shifted overnight whenever a man-hour or a few feet of wasted motion could be saved. For example, a manifold outlet section, that formerly traveled 3,919 feet before completion, now travels only 2,527 feet.

THE ADVANTAGE

Applying the obvious advantage of this typical saving to all production processes results in the elimination of millions of feet of unnecessary handling in a year... a direct saving of taxpayers' money. The benefits of **FLOW PRODUCTION** at Ryan go into products for the military services and other companies and are passed on to all aircraft manufacturers through industry coordinating agencies.

RELY ON RYAN TO BUILD WELL



1922 1944

RYAN
AIRPLANES

Ryan Aeronautical Company, San Diego—Member, Aircraft War Production Council, Inc.
Designers and Builders of Combatant Type Airplanes and Exhaust Manifold Systems



KLYSTRON:

A pencil of energy beamed like light

IF YOU'LL imagine an *invisible* search-light beam, you'll have a good picture of how Klystron-generated radio waves can be directed into a narrow "pencil" of energy.

► This direction is accomplished by suitable reflectors. The beam of ultra-high-frequency waves travels

in a straight line, and it can pierce fog, smoke, and clouds which would stop a light beam.

Sperry-developed Klystron tubes are used in many equipments now serving our Armed Forces. Later, *Klystronics* will open the door to the development of many ingenious peacetime devices.

► Klystrons are now being produced in quantities, and certain types are available.

The name "KLYSTRON" is a registered trade-mark of the Sperry Gyroscope Company, Inc. Like many other Sperry devices, Klystrons are also being made during the emergency by other companies.

Sperry Gyroscope Company
INC.
GREAT NECK, N. Y. • DIVISION OF THE SPERRY CORPORATION

GYROSCOPICS • ELECTRONICS • AUTOMATIC COMPUTATION • SERVO-MECHANISMS

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Test Pilots Represent Life Span of Aviation 'Know-How'

By PEGGY GUETTER

A TOTAL OF 171,257 planes have been produced in this country since Pearl Harbor, and each plane has been test flown. This spectacular accomplishment has been an unwritten and little heard of saga of behind-the-scenes activity in aerial warfare and modern aviation.

It is the daily wartime job of the test pilots to give the final nod of approval to planes as fast as they are rolled off the assembly line. These men represent the life span of aviation 'know-how.' They've come from all parts of the country, from the airlines, from flying schools, from crop dusting, barnstorming, and piloting for private industries. They've come to put their flying knowledge behind the younger men at the fighting fronts.

Test pilots at Lockheed Aircraft Corp., Burbank, Cal., provide a typical example of this job well done. Their teamwork and operations are mirrored in many other plants.

At the end of 1939, when the European war got into gear, there were only 12 test pilots at Lockheed. Today there are 85, of whom 55 are first pilots. These work six days per week on two shifts. The shifts are flexible and after a siege of bad weather, all the pilots will report and fly the tests until all planes are cleared. At one such period, there was a flight every two minutes for four hours to bring the P-38 tests up to schedule. The biggest day saw 172 production test flights. The average today is 71 due to the recent system of combining first and second flights into one test, followed by acceptance and delivery flight to Long Beach. In these combined tests, 86 percent of the planes prove mechanically perfect, attesting to the skill of the factory co-workers who build the planes.

No Fatalities Last Year

Last year there were nearly 27,000 flight without a fatality. Since 1939 more than 13,000 planes were tested and delivered, including 5000 P-38's, thousands of Flying Fortresses, Hudsons and Venturas with only five fatalities, one in engineering, two in production and two in ferrying flights.

Behind the total of deliveries is chalked up at least three hours of flying on each plane. In the early days of the war, when planes were flown to New York, delivery time was high. Now it is only a 10 minute hop from Burbank to the Ferrying Command at Long Beach.

The over-all time from the minute a plane leaves pre-flight to its delivery at Long Beach is approximately five and a half days. Testing represents only three hours of the total. The remainder is ground work, such as A. and E. inspection, installation of accessories and working out the "bugs" as pointed up in the pilot's "Squawk sheet."

Special assignments are handed to the pilots. Typical is the current important study in which 12 pilots are running accelerated service tests on P-38 engines, flying from three to four hours over 30,000

feet, to get five minutes more emergency power out of each hour.

From their ranks come the engineering test pilots who carry out the work on prototypes and collect performance data on engine modifications, drop tanks, dive tests and speed runs, to mention a few of the tasks assigned to the flying scientist.

The average age of the test pilots is 37 with the oldest 55 and the youngest 29. For one group this is the second war in which they've flown.

Chief test pilot is Milo Burcham. His name is synonymous with Lockheed planes. Whenever Southern Californians looked skyward to watch the initial flights of the flashing P-38, and later, the Constellation, they knew that Milo was putting them through the spaces. At the same time, he was also making important studies in stratosphere flying and using his inventive genius to design a visual oxygen meter that insures an accurate check on the strato-pilot's flow of oxygen.

Black Flying Second War

During his years of flying since 1928, years that encompassed record breaking upside-down flights, aerial stunting and barnstorming from improvised fields in Mexico and this country, scientific accuracy and mechanical perfection of his aircraft has been Burcham's credo.

Like his fellow-flyer at Lockheed, Jimmy Mattern, Burcham's career is well-known throughout the industry. Yet some may forget Burcham's invention of 1928, an airmail pick-up device, still in use today. It consists of four uprights, rigged with a net and a device to clip the light rope used to lower the mail bag from the plane.

Avery Black, assistant chief test pilot, is flying his second war. A classmate of Jimmy Doolittle in the flight training days of the Army Signal Corps, Black was one of that small band of pioneers who stuck with aviation during the lean days after World War I.

He chose commercial operations. Forming Pacific Airways Corp. in 1921, he was vice president and general manager of an airline carrying mail and passengers between Seattle and Vancouver, later ex-



SHOWS THE WORKS—This photo of a Douglas Dauntless dive-bomber in flight over the Pacific gives an unusually clear view of the plane's firepower—bombs, below, and machine guns, at left.

Boeing Not a C-98!

Various British publications, including *The Aeroplane Spotter*, have stated that the Boeing 314 flying boat "has now been given the service designation of C-98. This is in error. All of the Boeing 314 flying boats were purchased by Pan American Airways. Three were turned over to British Overseas Airways Corp. and the PAA boats were sold to the U. S. Navy and are now operated under contract by PAA. The designation C-98 is an Army Air Force designation.

panding to Victoria. Their equipment was the Navy flying boat, HS2L.

After two years in the Northwest, he turned to Honolulu, where, as Black describes it, "the airline business was not so successful," in the early 'twenties. However, he wasn't grounded very long. After a brief turn in the auto business, he began a charter service and aviation school at the Los Angeles Eastside Airport in 1927.

Black returned to his first interest, airline operation, when he joined forces with Walter Varney, airline veteran. He flew on Varney's route to Mexico City, then took over the vice presidency and management of the company's El Paso to Pueblo Division at its inception in 1934. When the division was extended to Denver, becoming an independent company known as Varney Air Transport, Black was president. In 1938 the company became Continental Air Lines, and Black remained as a director and pilot until 1940.

Joining Lockheed as a test pilot at that time was like coming home. Since 1931 Black had flown nothing but Lockheed equipment in his airline operations.

Fathered Several Lines

Flying along with Black is "Walt" Varney, pioneer of air transport development in the West. He fathered, in addition to the predecessor company of Continental Air Lines, Varney Speed Lines and Pacific Air Transport, which became part of United Air Lines system, as well as Lineas Aereas Occidentales, an international operation from Los Angeles to Mexico City. This is now the route followed by Cia Mexicana de Aviacion, (CMA), subsidiary of Pan American Airways.

Varney who soloed in 1917 and piloted the "Jennies" of World War I, says of things to come, "War has advanced the aviation industry at least 10 years. As for the airlines, it has created an expansion which would have taken 50 years at the pre-war pace.

"There is the difference of day and night between the planes of today and the start of airline operations. It is now a technical game in handling the horsepower and instruments of scientific flying. Air travel is bound to absorb all first class passenger travel. I'd like to see the size of the future plane limited in favor of schedule frequency. The smaller unit seems to be the answer for economy and sound development."

And the early operations directed by Varney give foundation for his views of coming things. Flying Lockheed Orion,

(Turn to page 82)

Blueprints of 'Skybus' For Feeder Lines Ready

AN ENGINEERING PRESENTATION of the Douglas Aircraft Co.'s proposed postwar feeder line plane, designed for all-around utility on short air routes, was made public last fortnight. It has been designated the 'Skybus.'

Details of the plane were presented in an illustrated 12-page booklet which is being distributed to airline presidents and Government officials.

The Skybus is a high-wing twin-engine all-metal monoplane with tricycle landing gear. The high-wing feature permits full downward vision for passengers.

Although primarily designed for efficiency and economical operation, the plane has high performance and an exceptionally high payload of a maximum of 24 passengers and cargo, Douglas engineers said. Good maneuverability in the air and on the ground, plus ability to take off and land on small airports were listed as outstanding features.

Two Wide Doors

Two wide, truck-bed-level doors are provided for easy loading of cargo and mail directly from truck to airplane. There is also a chest-high cargo compartment aft of the cabin for additional baggage or cargo.

The forward bulkhead of the passenger cabin is movable and may be placed various distances aft, if it is desirable at any time to decrease the passenger capacity and enlarge the cargo compartment. Conversion may be made in five to 10 minutes.

Just inside the cabin are large baggage racks so that passengers may deposit luggage upon entering the airplane, and have access to it in flight, without assistance from the crew.

It is not necessary to schedule the seating of passengers since the Skybus is so balanced that tail- or nose-heavy conditions will not result from random seating.

Two 700 hp engines provide the power. Fuel is carried in the wings. The plane has a fuel capacity of 300 gallons and an operating range of 600 miles. It has retractable landing gear and steerable nose wheel. At maximum take-off gross weight of 17,300 pounds, a cruising speed of 190 miles per hour at 5,000 feet on 60% rated power is obtained. Better than 11,000 feet altitude may be maintained with one engine out. Stalling speed is less than 65 mph.

Plans Flexible

Douglas officials said that production plans are flexible and that concrete arrangements for production have not been formulated or discussed with the operators as yet.

Engineers outlined the following operating data:

Engine Two with 700 HP for Take-off, 600 HP Rated Altitude of operation 5000 ft.
Power for operation, 60% rated power 360 HP per engine

Maximum take-off weight—limited by take-off climb 17300 lb.
See regulation CAR .04.7531-T

Maximum take-off weight—limited by available take-off field length of 2000 ft.—13930 lb.
See regulation CAR .04.7531-T

2500 ft.—15130 lb.
(For intermediate distances see Figure 3)
3000 ft.—16030 lb.
3500 ft.—16760 lb.
3960 ft.—17300 lb.

Landing weight 17300 lb.

Weight empty—24-passenger arrangement 10680 lb.

Weight of crew—pilot and co-pilot 340 lb.

Weight of trapped fuel and oil 80 lb.

True airspeed at 5000 ft. on 60% rated power at take-off weight of 13930 lb.—194 mph

(For intermediate weights see Figure 4)
15130 lb.—192 mph
16030 lb.—191 mph
16760 lb.—190 mph
17300 lb.—189 mph

Block-to-block time ..Level flight time + TM

TM — maneuvering time allowance (total time to descend, load, and climb between refuelings) As indicated on Figures 1 and 2

Fuel reserve 0.20 X fuel for range + fuel for 45 minutes

Fuel capacity 300 gallons

Oil capacity 20 gallons

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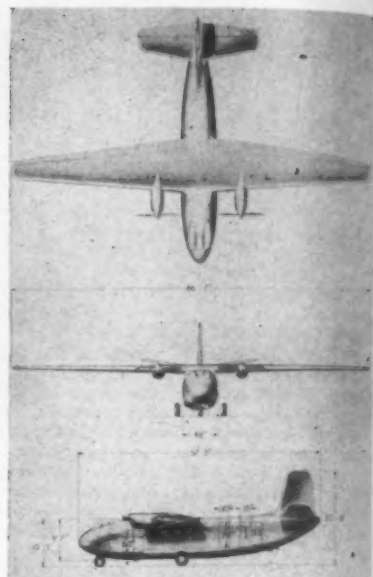
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Three views of 'Skybus'

For the purpose of this study, the following costs have been assumed:

C_a = Cost of airplane	\$63,000
C_e = Cost of engines (2)	\$14,000
C_{pr} = Cost of propellers (2)	\$ 3,500
C = Total cost of airplane	\$80,000

Direct operating costs (Dollars per hour):

Crew cost	\$11.20	= \$11.20
Cost of fuel and oil — gallons of fuel consumed per hour X \$0.15 per gallon		= 9.15
Airplane and propeller maintenance	$65 \times 10^{-6} \times (C_a + C_{pr})$	= 4.25
Engine maintenance	$0.28 \times \sqrt{\text{rated power}} \times \frac{100}{\% \text{ rated power used}}$	= 4.10
Passenger insurance	Assumed \$0.10 per passenger per hour	= 2.40
Airplane insurance	$40 \times 10^{-6} \times C$	= 3.20
Airplane depreciation	$\frac{C_a}{15000}$	= 4.20
Engine depreciation	$\frac{C_e}{3000} \times \frac{100}{\% \text{ rated power used}}$	= 2.80
Propeller depreciation	$\frac{C_{pr}}{5000}$	= 0.70

Total, when above data are substituted into equations \$42.10

Payload capacity = 24 passengers and 120 cubic feet

of cargo volume 6500 lb.

Local Operators in Tough Spot

One well known executive of a lightplane manufacturing company who has just completed an extensive tour of the country is predicting that 50% of the existing fixed base operators will be out of business before postwar business picks up, or will have been absorbed by larger operators who have the dough to last through the drought of transition from war to peace. Some local operators are feeling the pinch badly now that war training contracts are out and because they aren't essentially businessmen who can prepare for tough stretches like the one now coming. Larger outfits are doing big business in training and can last out until new postwar planes come on the market. All indications point to a very substantial re-alignment of the local operational field with larger outfits beginning to pick up airports to operate in chain-store fashion.

"Gulf Cutting Oils

**HAVE MATERIALLY INCREASED OUR
PRODUCTION AND TOOL LIFE"—**

Says this plant Superintendent



Actual photo of a Gulf Service Engineer consulting with Superintendent of aircraft parts plant. This plant has considerably improved machining practice with Gulf Lasupar Cutting Oil and Gulf Cut-Aid.

"This Gulf Service Engineer

**GIVES US THE RIGHT RECOMMENDATION
FOR EVERY MACHINE AND TYPE OF WORK"**

THIS is one of hundreds of war plants that have secured greater production and longer tool life from the use of the proper Gulf Cutting Oil for every machine and type of work, as recommended by Gulf Service Engineers.

Here's the important reason why Gulf Cutting Oils help improve machining practice: Every Gulf Cutting Oil has specific properties which insure better performance on certain types of cutting jobs! Gulf Lasupar Cutting Oil, for example,

is used to advantage by the shop shown above. This oil is manufactured by an exclusive process that secures characteristics uniquely advantageous to many cutting operations.

Call in a Gulf Service Engineer today and ask him to show you how Gulf Cutting Oils can help you improve production and tool life and obtain better finishes. For your copy of the booklet on Gulf Cutting Oils, send the coupon below.



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Please send me, without obligation, a copy of the booklet, "Gulf Cutting Oils," which includes a 45-page Machining Guide.

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Title.....

Address.....

Statistics on Redesigned DC-4 Revealed by Douglas

**Twice as Big as DC-3
and 55 mph Faster;
To Carry 44 Persons**

DOUGLAS AIRCRAFT CO. last fortnight released complete dimensions and performance statistics on the DC-4 which, as the Army's C-54 and the Navy's R5D, has seen wartime service throughout the world.

As originally ordered before the war by American Airlines, Eastern, United and Pan American, the DC-4 was to be a 40-passenger plane. "Revolutionary progress in aerodynamics and engine construction, which were going on simultaneously with the final construction of the DC-4 prototype, resulted in a decision to completely redesign the plane," Douglas said. "New plans called for an airplane which would have approximately half the wing area and be aerodynamically much cleaner."

The new DC-4 will carry 44 passengers and baggage plus cargo as a dayplane. As a sleeper it will transport 22 passengers and baggage plus cargo.

General data and performance figures follow:

Manufacturer	Douglas Aircraft Co., Inc.
Company Designation	DC-4
Army or Navy Designation	C-54 (Army), R5D (Navy)
In Production	Yes
Crew or Number Seats	5 Crew, 44 Passengers

DIMENSIONS:

Span	117 ft. 6 in.
Length overall	93 ft. 11 in.
Height overall	27 ft. 6-5/16 in.

AREA:

Wing (including aileron)	1462 sq. ft.
Aileron	123.4 sq. ft.
Fin	72.5 sq. ft.
Rudder	63.4 sq. ft. incl. rud. bal.
Stabilizer	206.2 sq. ft.
Elevator	119.0 sq. ft.

WINGS:

Spar	3 Spar Wagner type beam construction
Ribs	Formed sheet metal
Covering	Alclad sheet

LANDING GEAR:

Type	Retractable hydraulic tricycle
Tread	24 ft. 8 in.
Wheel type and size	Goodyear 17.00 x 20
Brake	High pressure hydraulic
Loading gear shock unit	Oleo pneumatic Goodyear
Nose unit	44 in.

POWER PLANT:

Make of engine	Pratt & Whitney R2000-7 (4)
Take-off hp.	1350 each
Rated hp. at 7,000 feet	1100 each
Fuel capacity	3723 gal.
Range	4300 mi.
Propeller-make	Hamilton Standard
Diameter	13 ft. 2 in.

PERFORMANCE:

High speed	285 m.p.h.
Cruising speed	235 m.p.h. (at altitude 10,000 ft.)
Stalling speed	80 m.p.h.
Climb at sea level	1200 ft. per min.

WEIGHTS:

Gross Weight	65,000 lbs.
Weight empty	39,000 lbs.
Wing loading	44.5 lbs./sq. ft.
Power loading	12.05 lbs.

Twice as big as the DC-3, the DC-4 is normally able to carry more than twice the overload of the former, or almost four times the pre-war load permitted by CAA regulations, according to Douglas. Maximum speed is 55 miles per hour faster than the DC-3. Cabin dimensions are approximately those of a standard railroad box car. It carries a payload of 20,000 lbs. a distance of 1,500 miles nonstop.

"In an early test for the United States Army, the plane was required to take off in 1,800 feet with a near maximum gross of 62,000 lbs., and to land using only 1,900 feet of runway," the announcement said, adding that "in passing the paratrooper test, the engines were throttled down to 105 miles per hour, and the left inboard engine (nearest the exit) idled. This eliminated all prop wash, producing the effect of a free jump—an added advantage of four engine airplanes. In a glider towing test, three big 15-place gliders, each carrying eight men, were towed up to 1,000 feet. The C-54 cruised at 120 miles per hour for 15 minutes before cutting the gliders loose."

The government has built and tooled at Chicago a large plant for exclusive pro-

'Dumbo' a Veteran

The Navy's first four-engined R5D Skymaster, one of the first produced at the Douglas plant, which has logged 234,000 miles in all theaters of war, recently arrived in Maryland preparing for trips between America and North Africa.

The transport called 'Dumbo' by the crew, underwent a recent overhaul at Santa Monica, Cal. Its travel history since it was delivered to the Navy Feb. 23, 1943, has covered the North Atlantic, North Africa, Italy, and South America.

duction of C-54s, and has ordered production increased at the Santa Monica plant.

The DC-4's fuselage is of all metal, semi-monocoque construction, while wings are of all-metal cantilever type, of multicellular construction. It consists of an outer panel with detachable tips and a center panel integral with the fuselage. The center panel mounts the engine nacelles, retractable main landing gear and four integral fuel tanks with a total capacity of 1,879 gallons. Metals chiefly used in construction are aluminum alloys.

Provision is made for storage of cargo in three locations in the fuselage. One cargo compartment is provided above the floor on the righthand side of the fuselage forward of the passenger cabin. Access to this compartment is by means of a 60-inch wide loading door, and the compartment has a capacity of 135 cubic feet. Two additional cargo compartments are provided underneath the floor, access being by means of doors approximately 30 by 36 inches. Capacity of the forward belly compartment is 120 cubic feet, the rear 165 cubic feet.

Basic design of the new DC-4 is such that cabin pressurizing may be installed if desired, the company states.

At the left rear of a cabin is a complete buffet, equipped with hot plates to allow limited cooking in the air, as well as thermo cabinets and jars to keep food hot or cold in flight. A small desk for the cabin attendant is provided.

C-47 Sets Record

**Skytrain on Alaska Run
Goes 15 Hrs. Per Day
For Two Months**

An average of 15.9 hours in the air per day for two months is the record set by C-47 Skytrain No. 8493 on the Alaskan run.

This plane, military version of the Douglas DC-3, the 'workhorse' of air transport, has been operated in the Alaska Wing of Western Air Lines under contract to the Air Transport Command. Its enviable record of performance was set during April and May on the run between Great Falls, Mont., and Fairbanks, Alaska.

In breaking the record, this C-47 even surpassed the daily average of 15 hours which has been the goal aircraft utilization in the Alaska Wing.

...AIR COMMUNICATIONS

Guardian of Tomorrow's World of Flight...

A great new era of air transportation is on the way... and AIR COMMUNICATIONS, Inc. is proud to have a part in helping to bring it ever nearer.

Already new electronic communication developments have brought new safety and increased striking power to our warplanes—enabling them to fly true to their target, and return to base through the densest fogs, storms and darkness.

Tomorrow, still more amazing air communications will form and mark the highways of the skies, for private planes as well as for the great coast-to-coast and trans-oceanic airliners—will make air travel *positive* day or night, in storm or fair weather.

While AIR COMMUNICATIONS, Inc. continues to produce precision built products for the war effort, our engineers are busy developing new and improved devices for the great post-war "Air Age"—to safeguard tomorrow's world of flight. In the peacetime future this war-tested organization will design, engineer and build *everything for the safety, economy and convenience of flying.*

Cooperative Engineering Available—let us help you solve your engineering problems of the future.

AIR COMMUNICATIONS, INC.

KANSAS CITY 8, MISSOURI

Designing, Engineering and Building for Victory...and for the Future



New Hydraulic Wiper Motor

**WEIGHS 1 POUND, SMALL,
POWERFUL, EASY TO INSTALL**

A complete motive unit, easily tied into the airplane hydraulic system, this motor produces ample power for the operation of windshield wiper blades across flat, curved or compound curved glasses. The motor has high torque, permitting a blade speed up to 400 strokes per minute during flight. Contributing to the efficient design of the new unit is our experience, gained from pioneering and producing the wipers now used by the U. S. airlines and air forces of the Army and Navy.

The **Marquette**

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'Spinproof, Stallproof' Ercoupe To Be Ready for Postwar Use

RANKING HIGH IN PLANS for filling the needs of private flyers at the close of the war is the Ercoupe, described by its manufacturers, the Engineering and Research Corp. of Riverdale, Md., as 'the maximum achievement of maximum utility, safety and simplicity of flight.'

The Ercoupe, of which there were 112 of the Model 415-Cs produced before the war, is certified by the CAA as 'characteristically incapable of spinning.' Also described as stall proof, it has eliminated rudder pedals. Only the control wheel is used. Ailerons, rudders and nosewheel are mechanically coordinated so that the pilot can turn, both in the air and on the ground, by turning the wheel. The same wheel moved fore and aft controls the elevators. In place of the term 'two-control', now in common use, it often is called a 'one-control' plane.

Harry Agerter, sales manager of the Ercoupe Airplane Division of the E. & R. Corp., already is lining up distributors throughout the nation. The price of the all-metal Ercoupe is expected to be \$2,665.

The Riverdale plant of 3000 employees now is working entirely on war materials. It will start full production on Ercoupes as soon as its machinery is freed of war tasks.

Ercoupe engineers say persons can be taught to fly this plane in about one-third less time than other ships.

The four main features of the Ercoupe—stallproof, spinproof, tricycle landing gear and two-control—were introduced to the American public in the summer of 1940. One hundred of the 112 Ercoupes manufactured are said to be still in service.

Its makers do not contend the plane is fool-proof, but they do insist it is fool-resistant.

The tricycle landing gear has since 1940 assumed an important place both in commercial and military aircraft and in both large and small aircraft.

The Ercoupe manufactured after the war will be much like the pre-war model, except for some improvements and refinements.

Agerter believes that it will be possible to manufacture and distribute from 20,000 to 25,000 light aircraft of all makes the first year of actual postwar production and this does not include the approximate six months period of conversion to normal manufacture. Under normal business and financial conditions he believes it should be possible to double this quota the second year.

The Ercoupe with its 65 h.p. Continental engine cruises at 105 m.p.h. The motor may be increased to one of 75 h.p., according to company officials.

Standard equipment of the Ercoupe will include hydraulic brakes, parking brakes, engine instruments, tachometer, compass, altimeter, air speed meter, steerable nose-wheel, cabin heater, and instrument panel compartments.

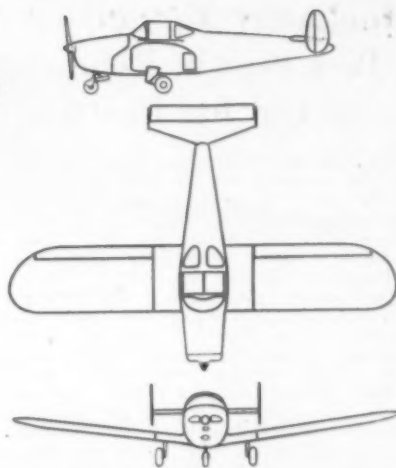
Specifications

Wing area142.6 sq. ft.
Chord5 ft.
Span30 ft.
Length20 ft. 9 in.

Height5 ft. 11 in.
Elevator area9.4 sq. ft.
Stabilizer area10.2 sq. ft.
Rudder area (2)6 sq. ft.
Fin area (2)3.3 sq. ft.
Aileron area (2)16.8 sq. ft.

Full Load Weights and Performance

Engine65 H.P.
Power loading ..19.4 lbs. per h.p.
Wing loading ..8.8 lbs. per sq. ft.
Empty weight725 lbs.
Useful load535 lbs.
Gross weight1260 lbs.
Baggage allowance50-60 lbs.
Fuel capacity (standard)..23 gals.



Three-view drawings and photo of Ercoupe

Fuel consumption,
cruising4.6 gals. p.h.
Oil capacity4 qts.
Oil consumption3/4 pt. p.h.
Maximum speed117 m.p.h.
Cruising speed105 m.p.h.
Cruising range, maximum 525 mi.
Minimum speed—power
on42 m.p.h.

Minimum speed—power
off48 m.p.h.
Landing run220 ft.
Service ceiling13,000 ft.
Take-off run—optimum
conditions340 ft.
Rate of climb, first minute 700 ft.
Fuel mileage23 mi. p. gal.

CAA Administrator Sees Need for 300,000 Lightplanes

Three hundred thousand private planes and 1,200 commercial transports will be needed for postwar flying, Charles L. Stanton, CAA Administrator, said in a recent interview in Los Angeles. He expressed the belief airliners of the immediate future will be converted from military transports. To test these planes for CAA commercial standards, Stanton stated there was a general understanding between the Army, Navy and CAA that military craft samples would be turned over to the civil body for testing as soon as equipment is available. This policy, he said, has been motivated for some time, and within a few months, as war conditions improve, will be greatly accelerated.

Stanton was in Southern California to visit headquarters of the Sixth CAA Region, headed by Howard A. Hook. He reported their conferences were over disposal of surplus training planes; plans to equip the new airline route between Los Angeles and Denver with VHF radio ranges, and airport development throughout the region.

In anticipation of the CAB decision which will grant the new air route from Denver to Los Angeles to a carrier, Stanton said his division was getting ready to have equipment available for VHF ranges.

"Since we anticipate the greatest increase in flying to come from the private field," Stanton said, "our fifth overhauling of the CAA national airport program stresses small airports. It will call for 6,200 airports in the national system, one airport available for every community of 1,000 or more population; in cities over 30,000 population, more than one airport is needed."

"Today there are 3,000 civil and military 'ports' intended for civil use immediately after the war. The new program of 6,200 airports will approximate a check-board of airports every 20 square miles."

Stanton expressed impatience with advocates of flight strips who would have placed along Federal highways, regardless of location to community or recreational area, merely, where there is a highway program underway.

Hockaday 'Comet' Test Flown; Ready to Bid for Postwar

Starting the procession of private plane designs expected to come from Southern California in the post-war years was the Hockaday "Comet," two-place, high wing monoplane, now being test flown from Compton Airport in Compton, Cal.

Designed and built by Noel R. Hockaday, founder and president of Hockaday Aircraft Corp., Burbank, subcontractor for Northrop, Consolidated Vultee and other airframe manufacturers, the "Comet" has side-by-side seating arrangement, dual wheel control full cantilever landing gear, with a gross weight of 1600 pounds. Powered with 130 horsepower Franklin motor, top speed is 145 miles per hour, cruising speed 130 miles per hour and landing speed of 50 miles per hour. Range is 500 to 550 miles.

The wing structure consists of two laminated spars, wooden ribs, reinforced leading-edge and fabric covering. The



LIGHTPLANE NEWCOMER—The Hockaday 'Comet' is shown with its designer and builder, Noel R. Hockaday. It is a two-place craft, has a 130 hp engine and a cruising speed of 130 mph.

fuselage is welded steel tube with a covering of half metal and half fabric. Welded steel tubing, covered with fabric, is use in the tail unit.

Hockaday told *American Aviation* he planned production of the model as labor and facilities permitted. The second plane is now under way. Work was begun on the "Comet" five years ago, but during the last two years no development was attempted under rush of war work. Estimated cost is \$3,000 on a production basis of 10 planes per week.

Cap. Penny Rogers, veteran test pilot

for Convair and other companies, is carrying out the testing program.

Specifications are: span, 33 ft.; length, 22 ft., 2 in.; wing area, 156 sq. ft.; power loading, 12.8 lbs. per h.p.; wing loading, 10.25 lbs. per sq. ft.; empty weight, 953 lbs.; useful load, 647 lbs.; gross weight, 1600 lbs.; fuel capacity, 24 gallons; oil capacity, 2½ gallons; baggage, 100 lbs.

West Virginia Forum Told 'Anyone Can Fly'

"Anyone can fly," W. L. Jack Nelson, Technical Assistant to the Executive Director CAA-WTS told the West Virginia Aviation Forum held in Charleston, W. Va., last fortnight.

Nelson based his statement on tests conducted by Oliver Parks. Parks gave flight instruction to 109 of his non-flying Parks Air Schools employees. The men required four and one-half hours before solo, women four hours and 54 minutes.

"The mind of the non-flying layman is confused by the large number of young men who are being washed out of the Army and Navy flying schools," Nelson said. "The impression is most likely to be that these young men can't fly. That is not so, they can fly, but the present tempo of this war, requiring the minimum period from the time of induction to the time of actual combat, means that the Army and Navy must continue the training of only the cream of the crop of pilot candidates."

Auto Dealers Warm

Lightplane manufacturers are impressed by the great interest being shown by auto dealers and distributors who want to add planes to their wares. Some of the largest and oldest distributors who grew up from the hard days when autos were difficult to sell without highways to operate them on, are hot after planes and think many industry officials are too conservative in their sales outlook. Most of the distributors and dealers don't want to sell planes in the same shop with autos—they are looking to new sales organizations. Industry people are impressed with sales enthusiasm of some of the hard-headed auto people.

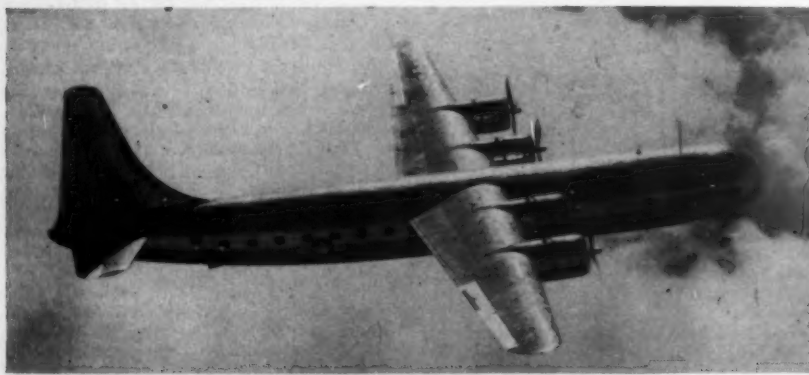
Wichita Plans Four 'Airparks'; Three Within City Limits

A postwar airport program projecting four in-town "Airparks", or landing fields for private planes, for Wichita, Kans., has been submitted to city officials by the local Chamber of Commerce.

Three of the "airparks" would be located within the city limits and one within the downtown shopping district. They would serve business, industrial, and residential areas. To illustrate, somewhere in downtown Wichita there would be an airpark located within easy walking distance of the main shopping district and principal business offices. Another such airpark would probably be located somewhere in the north Wichita Industrial district adjacent to the city's huge stock yards, the grain elevators, oil refineries, packing houses, and other plants.

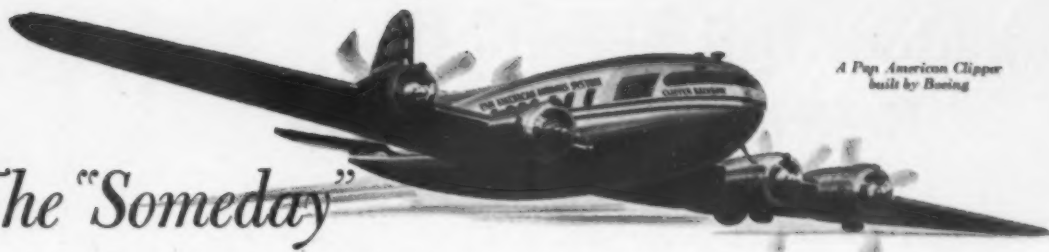
Wichita's present Municipal Airport, a 20-minute drive from the business district, figures in the airport program. It is believed that this field will be ample to handle all anticipated commercial cargo and passenger planes for sometime to come. Auxiliary to the Municipal Airport, under the plan, would be an additional municipal field, located some distance southwest of the city, to relieve the main field of miscellaneous activities hindering commercial traffic.

The Wichita Chamber of Commerce's plan was drawn up with a view to promoting postwar private flying and meeting the needs of and accommodating the private flyer. On announcing its plan, the Chamber declared its belief that "only through the development of the private airplane into a medium of mass transportation could we hope to rebuild and hold any sizable proportion of our existing wartime airplane-building capacity . . . Forecasting the future of aviation on the basis of commercial aircraft alone . . . would fall as far wide of the mark as would the predicted growth of the automobile industry, had it been based on sales of trucks and busses."



FIRST HIGH WING POSTWAR TRANSPORT—The Consolidated Vultee Model 39 is shown during flight tests.

It has a long round fuselage designed to carry from 48 to 52 passengers at a cruising speed of 230 m.p.h. Normal cruising range is 3,000 miles, making non-stop transcontinental flights feasible. The 110 ft. Liberator wing is used. The Model 39 is powered by four Pratt & Whitney 1,200 h. p. engines.



A Pan American Clipper
built by Boeing

The "Someday" of Global Air Transport Service is Actually Here Today!



BUY MORE
WAR BONDS

Pan American routes as of 1941, plus those added since then. The solid lines show today's routes—the broken lines show routes temporarily discontinued or unavailable. In addition, Pan American is now flying at the rate of 3,600,000 miles a month for the armed services over these original routes and over others which are not shown.

THE MAP ABOVE is NOT just an artist's conception of *proposed* post-war air routes. Quite the contrary! It shows a world-wide system of over 98,000 miles that was *actually in operation* before Pearl Harbor. This, the world's greatest air transport system, was carrying international passengers, mail, air cargo and the United States flag to five continents as long ago as 1941.

MORE THAN THAT!

Most of the routes pioneered by Pan American World Airways before the war have been in continuous operation ever since . . . Many of them, under contract with the Army Air Transport Com-

mand and the Navy Air Transport Service, have been greatly extended.

Service to Wake Island, Guam, Manila, Hong Kong and New Zealand may be temporarily discontinued but Hawaii, Africa, Portugal, Ireland and all the leading cities of Latin America are still regular ports of call for giant Clippers on scheduled flight.

Look at the solid lines in the large map above. If you have need *today* to fly to any of the cities on those routes, please consult your local Pan American office or your own travel agent for schedules, rates and other information. For Air Express shipments, telephone Railway Express Agency.

PAN AMERICAN WORLD AIRWAYS

The System of the Clippers BY PIONEERING AIR SERVICE TO 68 FOREIGN LANDS, PAN AMERICAN HAS GIVEN THE U. S. A. THE WORLD'S GREATEST AIR TRANSPORT SYSTEM.

Canadian Bill Specifies Board Similar to CAB

Would Provide Funds Direct From Treasury, Not Airmail Payments

By ERIC BRAMLEY

CANADA'S civil aviation bill, setting up an Air Transport Board somewhat similar to the U. S. Civil Aeronautics Board, was slated for passage by the House of Commons as this issue went to press.

The bill is generally regarded as one of the most important pieces of aviation legislation ever proposed in Canada. It will carry out the policy of the government, announced several months ago by Munitions and Supply Minister C. D. Howe, of keeping the different forms of transportation separate.

Howe, many times referred to as the "Mr. Big" of Canadian aviation, will retain his dominant position if the bill becomes law. The board will issue air transport licenses "subject to the approval of the Minister," and rulings of the board may be appealed to the Minister.

Many objections to the bill were raised in Commons debates by Conservative Party members, who accused Howe of being the "dictator" of Canadian aviation. However, it was expected that the Liberal Party, which has a large majority, will push the bill through.

Generally overlooked in most reports of the bill was the important provision which will change completely the method by which the Canadian government will subsidize its airlines. Instead of subsidy being through air mail payments, as in the past, sums will be appropriated for this purpose direct from the treasury.

Three Members on Board

The Air Transport Board will consist of three members appointed by the Governor in Council (the Cabinet). Members will hold office during good behaviour for 10 years, but may be removed at any time for cause by the Governor in Council. The initial members, however, will be named for periods of ten, nine and eight years respectively. The Governor in Council will name one of the members as chairman.

The board will make investigations and surveys of development of commercial air services to the Minister of Transport (Although the legislation mentions the Minister of Transport, this minister will not enter the picture because the air services branch of the Department of Transport is now administered by Howe, and the new board will be under him).

"Subject to the approval of the Minister, the board may issue to any person applying therefor a license to operate a commercial air service," the bill provides.

"No such license shall be issued in respect of a commercial air service owned, leased, controlled or operated by any person who is engaged in the transport of goods or passengers for hire or reward by means other than aircraft unless the Governor in Council is of the

opinion that it is in the public interest that such license be issued." This clause carries out the government's intention to keep different forms of transportation separate.

As in the U. S., certificates will not be issued unless convenience and necessity is shown. In addition, licenses cannot be issued until an operating certificate has been issued by the Minister to the operator "certifying that the holder thereof is adequately equipped and able to conduct a safe operation as an air carrier over the prescribed route."

Another important provision states that all licenses previously issued under other acts shall be reviewed and the board "may cancel or suspend any such license as it sees fit."

Trans-Canada Air Lines, the government-owned line, shall be granted, upon application, "a license to operate a commercial air service in such terms and subject to such conditions as will enable Trans-Canada . . . to perform any agreement made between the Minister of Transport and Trans-Canada . . . under section 15 of the Trans-Canada Air Lines Act, 1937."

With respect to subsidies, the bill provides that "the Governor in Council may authorize the Minister to enter into a contract with any air carrier for the grant of such assistance, financial or otherwise, as may be specified by the Governor in Council payable out of moneys to be appropriated by Parliament for that purpose."

Asked Conservative Member Howard Charles Green: "In effect, it (the bill)

Canada Undecided on Installation of Merlins in DC-4's

The Canadian Government has not yet finally decided whether it will install Rolls-Royce Merlin liquid-cooled engines on the Douglas DC-4 airplane which it will build, C. D. Howe, Minister of Munitions and Supply of Canada, told Canadian Aviation in an interview.

"All I can say at the moment is that our experience with our North Atlantic service leads us to believe that the Merlin engine has many favorable characteristics for long-distance transport work," he said. He admitted that the DC-4 which Canada is licensed to build would have to undergo "considerable" redesign if Merlin engines are used instead of the radial aircooled engines for which it was designed in the U. S.

Howe said about 15 to 20 of the DC-4's would be required for domestic services of Trans-Canada Air Lines, while trans-ocean services would use the remainder of the 50 planes to be built. His answer to the question of whether TCA would use all 50 DC-4's was: "We anticipate that the 50 planes will be required by Canada."



ALL IN FUN—When Daniel McVey, director general of civil aviation in Australia, arrived in Los Angeles recently, he was taken into "custody" by Sheriff Eugene Biscailuz. But then, alas, the sheriff gave McVey his star. Shown with McVey and the sheriff (right) is Charles Babb, head of an aircraft brokerage firm.

makes the minister a dictator in respect of all the airways in Canada, does it not?"

"Perhaps so; but who would you suggest should be dictator?" Howe asked.

"I do not think there should be a dictator myself," Green answered.

Green later asserted: "I protest against the measure . . . This is a leap in the dark . . . I believe it will sound the death knell of civil aviation . . . This particular board will be nothing but a board of moonshine. It will appoint a lot of officers and servants and agents and other people—to do what?—to help strangle the movement . . . It is going to mean confiscatory legislation with respect to a very fine transportation company which has borne the burden and heat of the day . . . The policy is ill-advised in that it makes a minister a dictator of civil aviation in Canada."

Church Accuses Howe

Thomas L. Church, Conservative member, accused Howe of forgetting "all about an empire air scheme." The U. S., he asserted, "grabbed the Pacific, and if we do not look out they will grab the Atlantic too . . . In our dealings with aviation we have been surrendering to Washington too much commercial initiative, political and social security initiative, economic initiative and aviation initiative. That is what we are doing instead of staying within the British Empire . . ."

Liberal members spoke in support of the bill.

"Would the present bill permit or prevent the use of the helicopter?" Howe was asked.

"It would make it very difficult for the helicopter to be owned by a bus line or by any other form of surface transportation," the minister answered.

Excursions to Newfoundland

Pan American Airways announces special excursion fares from New York to Shediac, New Brunswick, and Botwood, Newfoundland on transatlantic planes. The schedule will be in effect through October 15, with departures three times weekly from LaGuardia Field. The fares now in effect (round trip limit 45 days) are: round trip, New York-Shediac, \$81.00; round trip, New York-Botwood, \$148.50; round trip, Shediac-Botwood, \$74.25.

Geared for Flight!



HERE is the heart of an Aeroprop. Here are the simple components that produce the unvarying "on speed" Aeroprop performance that adds efficiency to the power and flight of many fighting airplanes.*

The Aeroprop's speed and precision of pitch control is achieved with unique simplicity. The entire assembly is self-contained and self-operated—unhampered by power lines or other accessories. Responding to powerful hydraulic pressures the blades may vary from low pitch to full feather in five seconds. Neither altitude nor temperature affect their swift automatic movement to the

precise degree of pitch that produces top performance.

Equally important is the Aeroprop blade design incorporating hollow, rib-reinforced, steel construction of exceptional strength and lightness—plus the overall simplicity that makes it possible for one man to install an

*P-39 AIRACOBRA • P-51 MUSTANG

Aeroprop in as little as 12 minutes.

Today Aeroprops have been assigned to service on two of the most formidable fighters in the Army Air Forces. Their amazing performance on these advanced ships is a guarantee of their high contribution to the conquest of the skies.

KEEP 'EM FLYING!



BUY BONDS!

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In War and Peace, Propeller Production at its Best!



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Night and Day—Round the Clock

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Ontario Premier Challenges C. D. Howe's Dictatorship

Provinces May Invade Field Hitherto Held As Federal Monopoly

By AUSTIN F. CROSS

WHEN ONTARIO'S PREMIER, Hon. George Drew, the other day threatened to incorporate provincially owned air routes if the government persists in its present monopoly policy for air lines, there lurked far more beneath the surface than might be discernible to the naked eye. First of all, the Ontario premier has as much as told Hon. C. D. Howe, Minister of Munitions and Supply, and Head Man of Canada's aviation, that Parliament Hill isn't going to push him around. Second, there is the threat of invasion by the provinces into what has hitherto been almost exclusively a Federal prerogative. Third, it is a clear-cut challenge to Howe's monopoly program.

It is well known by now that Mr. Howe does not propose to have any competition for his beloved Trans-Canada Air Lines. This writer has gone all over the ground before and the gist of it is that as long as Howe has any say in Premier MacKenzie King's administration, no air line that amounts to anything is going to function alongside his own darling baby, the T.C.A. He means this so earnestly, he is willing to defend his policy so ruthlessly, that he is quite agreeable to legislating Canadian Pacific Airlines right out of business, just to get his own way.

'Drew is a Fighter'

Assuming that Howe's policy prevails and the T.C.A. goes its own sweet, non-competitive way, then it means that Canada's air lines will only run where Mr. Big wants them to run. Ergo, some fairly large districts, some sizeable towns, might conceivably be "overlooked" if, in the opinion of Mr. Howe, an airline is not warranted in that particular locale. However, Mr. Howe and Mr. Drew might not necessarily see eye to eye in these matters. The way things were going up to now, they have been going Howe's way. But George Drew is a fighter from away back. He's not always right, but then again, he's not always wrong either. Consequently, he may resent government monopoly of air lines so much that he will launch his own companies from Queen's Park. That is, if he feels that's the only way to get air service where he wants it.

Supplying certain areas with air borne passenger and freight service is not a new idea to the Ontario premier. He has already promised that Ontario's 25 cities and near-cities would have air service, if somebody else didn't get busy and give it to them. Moreover, George is just the boy to do it.

Now then, supposing the Ontario government does go in for air lines. Two possibilities immediately are unfolded. The

first is that other provinces may follow suit. Then we should have blossoming from Atlantic to Pacific, all kinds of provincially-controlled air lines. They might well be provincially-owned, as are the western telephones. For instance, the Bell Telephone system stops at the Ontario-Manitoba boundary, and the three prairie provinces all have their own government-owned telephone systems. The provinces could, if they wanted to, presumably develop their own little air lines too. Or, if they did not care for public ownership, they could issue provincial charters for private companies. A province has all kinds of rights if its cares to use them, and the history of appeals to the Privy Council usually is that the province has been upheld. In other words, the provinces, if they got in a spot, would likely find the law on their side, not Mr. Howe's.

The third point is that some people are not taking Mr. Howe's monopoly pronouncement lying down. It must be pointed out that the Minister wants a good strong trans-continental air line. The strongest oak can be wrecked by clinging vines, and a sturdy tree can languish and die if over-shadowed by another tree nearby. In other words,

Howe can envision his TCA strangled by a multitude of little lines, or he can see it over-sadown by Canadian Pacific Air Lines. Hence his zeal for monopoly.

George Drew, Ontario's fighting prime minister, while willing to co-operate with the Capital in war essentials, nevertheless likes nothing better than to take a wallop at Ottawa when he can. Belonging to the party which has always favored private enterprise, which has been identified with the Canadian Pacific since Confederation, and which is on record a hundred times as favoring private enterprise, as well as competition, it would not cause the handsome George a single qualm to step in and fight for half a dozen new airlines in Ontario. If he fought hard enough, he could win too.

'Not Talking Through Hat'

Hon. Mr. Drew, in pledging the chambers of commerce of Northwest Ontario that he'd fight to get them air lines, if they were not provided by the federal government in the normal way, was not just talking through his hat. Drew really is keen about air, and is probably by far the most air-minded of all our provincial premiers. He would like nothing better than to pioneer provincially, some much-needed new airlines after the war. There is hope then, that the postwar days will usher in some spectacular new commercial routes. Whether they come through provincial support, through outright provincial ownership, or through invitation to American companies, remains to be seen. The possibilities are varied, they are enormous.

Watch the provinces sprout wings—airplane wings.

Tax on Fares Confuses Fixed Base Flyers; Canada Uses Simpler Plan

DIFFICULTIES being encountered by some fixed base operators with reference to their liability for a 15% Federal tax on charter fares has emphasized the need for some simple formula such as is used in Canada.

Recent action of the Bureau of Internal Revenue in citing some U. S. fixed base operators for failure to pay the tax on charter fares has raised some questions in the industry as to how the tax should be applied to various types of charter operations.

Total Amount Taxable

In the U. S., the tax is measured by the total amount paid, whether paid at one time or collected at intervals during the course of continuous transportation, as in the case of a carrier operating under the zone system. Transportation fares are subject to tax if the amount paid represents a per capita charge of more than 35% for each person transported.

The person who charts a plane yet sells the transportation service to other persons must collect and account for the tax with respect to all amounts paid to him for transportation in excess of 35 cents. In such case, no tax will be due on the amount paid for the conveyance but it shall be the duty of the owner of the conveyance to advise the charterer

of his liability for collecting and accounting for the tax.

Prior to Nov. 1, 1942, the tax was 5% of the amount of the taxable payment for transportation. Later it was increased to 10% and for the war period the rate of tax is 15%.

Suggestions made by Air Industries and Transport Association of Canada of which W. B. Burchall is executive secretary resulted in the adoption, by the Department of National Revenue, of a simplified procedure, which definitely classifies the type of operation to which the transportation tax is applicable.

Under the Canadian plan, the tax is applicable only to that portion of the charter on which passengers are carried, i. e. on passenger-mileage. The operator, when preparing an estimate of charter costs, computes the passenger-mileage himself, and when filing the monthly return, pays the tax on the passenger-mileage as computed. The 15% tax in Canada is applicable to fares of 50 cents on licensed routes but otherwise the tax on charter fares is at the rate of 1c per passenger mile.

In a memorandum to charter operators in Canada, the operation of the tax under varying circumstances was explained in the following illustrations:

1. A "charter" flight is arranged from A to B, a distance of 300 miles, with 4 pas-

sengers and 1200 pounds of freight. Return flight empty. Passenger miles equals 4 x 300—1,200 passenger-miles. At a rate of 1c per pass-mile tax would be \$12.00 or \$3.00 per person.

2. A "charter" flight is arranged at an inclusive charge and involves:

a. Ferry from A to B—100 miles, empty
b. Flight from B to C—80 miles, with 3 passengers.

c. Ferry from C to A—120 miles, empty. Passenger mileage equals 80 x 3—240 passenger miles.

At 1c per mile rate, tax would be \$2.40 or 80 cents per passenger.

The tax is not based on the total cost of the charter operation.

3. Charter arranged at cost of \$3,500.00 per month. Aircraft to be at clients disposition for transportation of passengers and freight or mixed loads. Operations include movement of client's personnel throughout area, several times weekly. Operator estimates that it will be necessary to transport six men 100 miles, four times per week.

Passenger mileage equals 6 x 100 x 4—2,400 pass.-miles per week and say 9,600 per month.

At rate of 1c per pass.-mile tax would be \$96.00 per month.

When filing the monthly return the operator would give these details as the basis of his computation of the tax.

Sick Get Fast Trip

Anchorage to Portland

A new flight speed record has been established between Anchorage, Alaska, and Portland, Ore., by United Air Lines flying for the Air Transport Command.



Sailors

Flying nonstop, Capt. Robert Sailors made the trip in seven hours, 15 minutes. His passengers were hospital patients being evacuated to the Barnes General

Hospital at Vancouver, Wash.

Maritime Central Only Line Conforming to Howe Plan

Independently Owned Company Has Strong Beginning as Feeder

ONLY ONE air transport company in Canada—Maritime Central Airways—young but with a healthy start, conforms to the plan for future operation of Canada's domestic air lines as laid down by Minister of Munitions and Supply C. D. Howe.

This line, is the only Canadian airline not controlled by Trans-Canada or Canadian Pacific and not tied in with any type of surface carrier.

MCA was organized in 1941, and, despite the obstacles of wartime restrictions and equipment shortages, expanded, increasing its passenger traffic from 9900 in 1942 to 17,600 in 1943. It was planned by two men who flew the transatlantic bomber run for the RAF Ferry Command, and is now operated and managed by the one who survived, Capt. Carl F. Burke.

Burke General Manager

Serving as a feeder for TCA, MCA links Charlottetown and Summerside, P.E.I., with Moncton and Saint John, N. B., and with the isolated Magdalen Islands. It conducts regularly scheduled mail operations.

Burke, the general manager of Canada's only independent airline, resigned from the Ferry Command in 1941, when his colleague, Capt. J. J. Anderson was killed in a bomber crash in the United Kingdom. Anderson and Burke had planned for the future airline together. Burke induced L. R. Champion, a Montreal businessman, and J. K. Curran, head of a Summerside construction company, to provide financial backing.

The line was started with two planes,

an eight-passenger Barkley Grow and a 10-passenger twin-engine Boeing, and a staff of 14, including two pilots and a chief engineer. On Dec. 7, 1941, MCA was ready for business. The first flight schedule was two round trips daily from Charlottetown to Saint John, via Summerside and Moncton. During the first months of 1942, a winter service was started to Magdalen Islands. By November of 1942, the number of daily round trips on the Charlottetown-St. John, run was increased to three, plus a Sunday service inaugurated during the summer. In June, the acquisition of a seven-passenger de Havilland "Rapide," had upped the company's plane fleet to three. Special non-scheduled flights have boosted the number of daily round trips in winter to as many as 14.

Owens Radio Stations

In 1943, not only did MCA's passenger traffic almost double over 1942, but its mail shipments also rose sharply.

Although a miniature, MCA is not a shoe-string line. It utilizes all the available facilities to ensure safety of operation. Five privately owned radio ground stations are operated at Saint John, Moncton, Summerside, Charlottetown and the Magdalen Islands, and a teletype circuit connects all these points, but the Gulf Islands. The carefully planned flights are radio controlled.

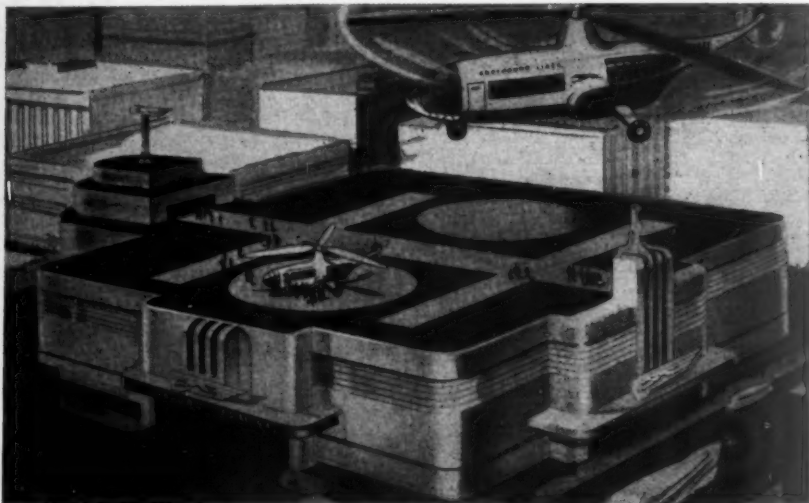
A new hangar houses the aircraft, shops and offices of the company at Charlottetown. At Summerside airport, a modern passenger rest room and office has been built. Close connections are maintained with TCA and Northeast Air Lines at Moncton and tickets may be purchased and baggage checked through to any point in Canada and the U. S. served by TCA.

Bright Future Seen

The postwar future of MCA promises to be bright, with expansion rapid. It has already mapped its plans and has applications on file with the Department of Transport covering proposed routes linking all the main centers of the Maritimes. It has earmarked \$250,000 for the project, which will necessarily be postponed until after the war, when aircraft are available.

Ocean Record Broken

A new record for a commercially scheduled flight from Foynes, Eire, to New York was set early this month by Capt. Charles A. Thompson, American Export Airlines pilot. He covered the 3,075 miles in 18 hours and 16 minutes flying time. Capt. Thompson, flying a load of 2746 pounds, which included 19 passengers from Africa and soldiers' mail, averaged 169 miles an hour. The previous record was set in June by Capt. Charles F. Blair of American Export. It was 18 hours and 43 minutes.



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Tariff Change Urged to Aid Canada's Aircraft Industry

Lower Duty on Parts But Protective Rate On Planes Proposed

REALISTIC DOWNWARD revision of Canadian tariff and taxes on plane engines and parts in such a manner as to protect Canada's postwar aircraft industry and lower the cost of air transport is recommended by the Air Industries and Transport Association of Canada in a formal memorandum and brief filed with the Government. A protective duty on completed aircraft and an embargo on used planes, however, are strongly recommended.

This Association, which since 1934 has been the trade organization of the aircraft manufacturing and air transport industries of Canada, pointed out that discussions of tariff adjustments and trade agreements between Canada and other countries are contemplated for the near future, and emphasized that careful consideration must be given to tariffs affecting the aircraft industry to assure its continuance on a sound basis.

The memorandum, signed by R. B. C. Noorduy, president of the Association, declared that Canada's international trade policy "should be coupled with the clear realization that there will be enterprises in Canada, essential to the existence of an integrated national aircraft industry, which will not be able to survive foreign competition, even from countries with high wage and living standards, unless subsidized or otherwise protected, to an extent which provides compensation for the higher costs of Canadian production."

Six Major Points

Basic points of policy suggested to prevent unnecessary increases in the cost of air transportation in Canada included:

1. Preferential treatment on aircraft produced in Canada, when exported to countries party to such agreements.

2. A protective duty on aircraft and substantially complete components in order to permit manufacture in Canada of the corresponding product to become firmly established.

3. "The market for aircraft and the cost of air transportation in Canada should not be handicapped, as it has heretofore been, by the imposition of duty and War Exchange Tax on parts, materials and components, of types and sizes not made in Canada. At present, due to the rate of exchange, the duty and War Exchange Tax, the increase in cost over the dollar price in the U. S., to the Canadian manufacturer operating under a sales tax license ranges from 38.75% on items bearing 15% duty, to 49.85% on items bearing 25% duty. In the cost to the Canadian air transport operator, the sales tax is superimposed on the above costs, thus pyramiding the increase to 48.96% on items bearing 15% duty to 60.95% on items bearing 25% duty. On complete aircraft imported, the increase amounts to 54.5%. Obviously the amortization of this

needlessly high cost of transport equipment not obtainable in Canada, is carried through as an increase in the cost of transportation to the public, and thereby handicaps its widest possible development."

4. "The same pyramid of duty, War Exchange Tax and sales tax, at present levied on machinery, tools and other manufacturing equipment not procurable in Canada, handicaps the Canadian manufacturer's competitive position in the export market and increases the cost to the Canadian consumer of aircraft and of the use of aircraft. . . . The amount of revenue obtainable is negligible as compared with the potential damaging effect on the Canadian economy. Care will be necessary . . . to make certain that relief is extended to such cases as patterns and moulds taken from or duplicated from originals in the country of origin, when imported once for the purpose of inaugurating manufacture of the same article in Canada."

5. The sales tax should be removed from tools, jigs, patterns and other manufacturing equipment.

6. "It is of extreme importance that the embargo heretofore imposed on the importation of used or second-hand aircraft be maintained as a permanent instrument of policy."

Reciprocity Insisted Upon

The Association insists on a fully reciprocal arrangement on duties. It points out that the present rate of duty on aircraft and complete parts, not including engines, under the intermediate tariff is 25%, which was reduced for products of the U. S. by the U. S. Trade Agreement effective Jan. 1, 1939, to 20% on aircraft not including engines, and 15% on complete parts, not including parts for engines. The rate of duty on these items under the U. S. is 30%.

"However," the Association recommends, "in order not to obstruct the development of air transportation in Canada through high freight rates and passenger fares resulting from the excessive cost of equipment, due to the duty and superimposed taxes, it is urged that an amendment or exception be added reducing the duty . . . to a figure of not more than 10% as a measure of Empire Preference (if such preference remains the policy of Canada), on aircraft not including engines, of a type or capacity of which the equivalent is not manufactured in Canada."

"Such fact, and the need for such aircraft, should be proven in each case by the party desiring to import, to the satisfaction of the Government authority controlling civil aviation, and of each such application that authority should give notice to the manufacturers of aircraft in Canada, and reasonable opportunity to be heard thereon. Complete parts, other than engine parts, for the maintenance of such aircraft, should then receive the same treatment."

Noting that it does not appear to be economically feasible to manufacture aircraft engines in Canada, the Association

British Loyalty

Recently Sir Stafford Cripps, Britain's Minister of Aircraft Production, made a tour of inspection of aircraft plants in England in an American Lockheed. The *Aeroplane*, British aviation weekly, commented: "The Lockheed is a good aeroplane, but we suggest it would be more appropriate for the Minister to use a British aeroplane for his tours."

declared that imposition of duty on imported engine parts, of types or sizes not made in Canada, is not justified. At present engines are free of duty under British Empire preference, subject to 17½% duty when imported from the U. S. Engine parts from the Empire are free of duty but subject to 7½% duty, less 10%, when imported from the U. S.

Accessories Duty Free

Pointing out that there will always be a considerable list of parts not procurable in Canada, the Association concludes that all such items, whether finished or requiring further work, should be exempt from duty.

As to aircraft accessories of which there is a wide range of types and sizes not manufactured in Canada, the Association also recommends continuation of the present free importation arrangement.

For inclusion in this bracket, it specifically lists the following: propellers, constant speed controls, accessory gear boxes and drives, fuel pumps, vacuum pumps, air compressors, air pumps, hydraulic pumps, direct or inertia starters, generators, voltage control boxes and panels, aircraft electric motors and switches, dynamotors, inverters, auxiliary power units, starter energizers, batteries, de-icing and anti-icing equipment, landing and navigation lights, hydraulic and pneumatic jacks and rams, control wheels, aircraft wheels, aircraft brakes, aircraft tires and tubes, oil coolers, radiators, cabin heaters, electric heaters, oxygen equipment, fuel pressure and undercarriage retraction, warning devices, exhaust gas analyzers, pressure fire extinguishers, primer pumps, instruments, bolts, nuts, cocks, turnbuckles, clevises and pins, control rod ends, universal joints, swaged wires, tie rods, ball bearings, roller bearings, needle bearings; including component parts and accessories and spare parts for any of the foregoing; bars, tubes, extrusions and forgings of aluminum, aluminum alloys and magnesium alloys, steel tubing.

NAA Parley Postponed

Requests from the Office of Defense Transportation that convention travel be eliminated have caused the annual meeting of the National Aeronautic Association scheduled for Aug. 2-3 in Denver to be postponed indefinitely. It is anticipated that the meeting will be deferred at least until after the first of the year. ODT orders will not affect the Joint Air-Port Users Conference under NAA sponsorship scheduled for the Statler Hotel, Washington, July 24-25.

Howe Declares:

CPA Not Ordered Dissolved But Must End Rail Link

IT IS NOT REQUIRED that the Canadian Pacific Air Lines system be broken up, but it will be required under the pending bill in Canada that no airline be owned or controlled by surface carriers, C. D. Howe, Minister of Munitions and Supplies, told *Canadian Aviation* in a question-and-answer interview published in its July issue.

"I call your attention to the fact that CPA has not been ordered to break up its system. The statement of Government policy indicated that airlines will be separate operations from surface transportation, and that the railroads will be asked to divest themselves of control of airlines not later than one year after the ending of the European war. There is nothing to prevent CPA from continuing its present operation under other than railway ownership.

"The Government had to decide whether air transport in Canada would be wholly owned by our two railway systems, and subject to competition of the type that exists between our two railway systems, or whether transportation by air should develop separately from surface transportation. The Government decided on the latter policy, believing that new transportation groups should have a place in aviation.

Foresees Private Capital

"The operators you refer to developed their own services, and sold them to CPA. Those services will continue to be operated, whether by CPA, or by the original operators, or by new operating companies. The present owners of CPA will doubtless decide the method by which these services will be operated in future."

Mr. Howe said that the proposed Air Transport Board would begin hearings as soon as it was created on new routes and he thought that present-day conditions are favorable for independent airline operators. "I anticipate that private capital will be forthcoming," he said. "A franchise for an air service is very valuable, and when the franchise is obtained the operator should be able to interest capital in the service."

He emphasized that the men now employed by CPA should have a place in future air operations in Canada, whether it is decided to continue CPA as an independent airline system or whether it is broken up into regional systems. But he said CPA would not be permitted to operate a transcontinental service since "a population of 12 million people cannot support two first-class transcontinental airlines."

He explained that the proposed Air Transport Board is similar as to duties and authority to the Civil Aeronautics Board in the United States. It will advise the Government on policy matters and will have final authority on judicial matters. The function of the Board will be to advise the Government and make recommendations in the matter of a new license. "I have no doubt that the Gov-

ernment will, in general, accept the recommendations of the Air Transport Board."

May Apply for Entry

Asked whether the Canadian Government had been consulted on the hearings in Washington for routes into Canada, Mr. Howe replied:

"The hearings at Washington are a necessary first step toward an application for the right to fly in Canada. The purpose of the hearings is to select the American operator who will be granted the privilege of applying to our Air Transport Board for a permit to operate in Canada. When one company has been selected for that purpose, its application will be forwarded by the State Department of the United States to the Department of External Affairs of Canada, and only then will the application be considered by Canada.

"Before any new operation in Canada can be considered by Canada, the International Agreement between our two Governments must be revised. When the Agreement comes up for revision, it is quite possible that Canada will wish to apply for entry of a Canadian operation into the United States."

Patterson Reveals UAL Plans for Returning Vets

Foreseeing that United Air Lines' business by 1948 will be five times greater than in its best prewar year, W. A. Patterson, president, has written to all United's employees in military service telling them how this anticipated expansion will affect their employment and opportunity.

"We had 3,500 employees at the start of the war, and we will require 18,000 employees within four years after the war," Patterson wrote. "Such an expansion will create many new jobs and opportunities."

United has tried to work out a plan that will minimize delays in reinstatement and specific assignment of returning veterans. "All united men and women in the military services have jobs awaiting them on their return which will be at least equal to those they left behind," said Patterson.

The plan summarized will mean that everyone on military leave may have 30 days' vacation or can start work sooner. Each employee seeking reinstatement must contact the company within 40 days from the day of his discharge. Each individual will be placed on payroll at salary received when he left. Those seeking positions of greater responsibility will be interviewed. A special transition course will be offered every returning employee. Reinstatement will be at a rate of pay that takes into consideration seniority, giving full credit for time spent in military service.

Col. White, Air Leader In Honduras, Returning To Home In United States

Col. Harold A. White, one of the founders of *Cia Nacional de Aviacion* in Guatemala, has resigned as comandante of the Fuerza Aerea and director of the Escuela Militar de Aviacion of the Republic of Honduras, which position he has held since 1940.



White

Col. White first went to Guatemala in 1930. In 1932, he resigned from *Cia Nacional de Aviacion* and joined TACA, later becoming manager and vice president of the airline. He is returning to his home in the United States for a vacation before announcing his future plans.

Former Fairchild Officer Restrained From Disclosing Secret Bonding Technique

An injunction restraining Duncan B. Cox, former officer and director of Fairchild Engine and Airplane Corp., from disclosing a secret process for bonding aluminum to steel, developed by the Al-Fin Corp., a Fairchild subsidiary, was granted June 24 by the New York Supreme Court. The order enjoins Cox from disclosing any knowledge of the bonding process for five years.

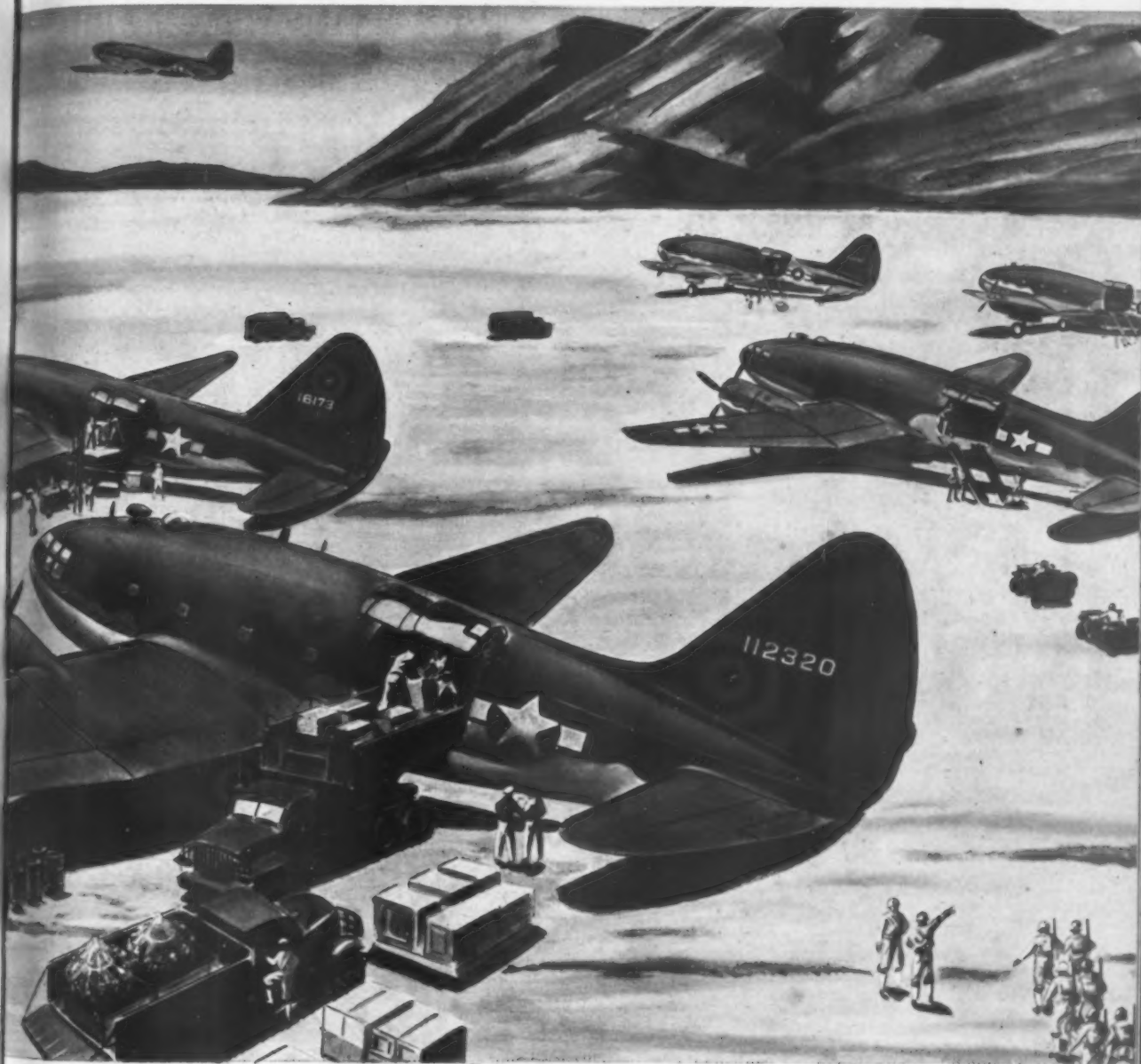
The suit was filed by Fairchild and its subsidiary after Cox had left their employ and become associated with the General Bronze Corp. to work in the metal-bonding field. Judge William T. Collins, who signed the order, held that Cox had acquired his knowledge of the Al-Fin bonding process while employed in "a confidential position under such circumstances as to make it inequitable and unjust for him to disclose the secret and make use of it."

The suit did not involve a patent principle but rather a secret art which the court found to be of value to Fairchild and its subsidiary in the conduct of their business, the opinion said.

League to Expand Board

The Civil Air Patrol League, which has met considerable opposition from wing commanders of the CAP, now is planning to increase the board of directors from 36 to 54. The original board of 36 did not have a single state CAP wing commander on it, but at a meeting recently it was agreed that 18 of them should be added for the time being to quiet the opposition. Three CAP wing commanders are to be added to the executive committee. It also appears likely that the purposes and activities of the League will be trimmed to restrict it to aiding and promoting the CAP. A legal aide of Gen. H. H. Arnold has been sitting in on the discussions.

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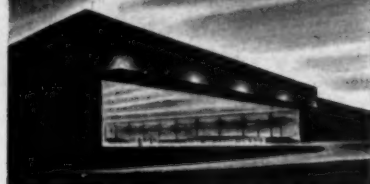
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mando's conversion to both a luxury liner and a commercial cargo carrier for civilian service. LOOK TO THE SKY, AMERICA!

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From our bomber plant in Georgia are coming B-29 Super-fortresses.



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On many planes and ships are the Bell designed flexible gun mounts.



Preview of the new Bell fighter—as it will be seen in action by the Axis.



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Bell Aircraft at War

... A PROGRESS REPORT

A good fighter plane—basic in modern military operations—must pack plenty of wallop. That's why Bell Aircraft developed its hard-hitting Airacobra around a 37-millimeter cannon firing right through the nose of the plane.

This "cannon on wings"—first American single-engine fighter to carry a cannon in the skies—has turned in a performance which caused the Russians to tell WPB Chairman Donald M. Nelson the Airacobra was one of the American products they liked best. And today the Airacobra is being joined by a new Bell fighter, capable of high-speed, high-altitude performance.

Building such fighter planes is only one

part which Bell Aircraft is playing in the war. On another front, the Bell Bomber plant in Georgia is producing the Boeing designed Super-fortresses (B-29's), largest long range bombers ever seen. And from our Ordnance Division in Burlington, Vt., come Bell designed gun mounts, including the new hydraulic power mount, that give the machine guns of many allied planes and surface ships their firing accuracy.

Meanwhile work is continuing on two other war projects, America's first jet propelled plane, and the new Bell Helicopter.

Post-war activities are being locked in our minds until the day of Victory. Then our organization, staffed with production men of skill and imagination, will turn their thoughts to pioneering in an aviation world at peace.

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Cities Oppose Federal Domination In Planning Postwar Landing Areas

Conference of Mayors Receiving Complaints On Stanton's Attitude

THE NATION'S CITIES are firmly opposed to the plan of CAA Administrator Charles I. Stanton for a Federal-aid airport program with apportionments decided in Washington, Paul V. Better, executive director of the United States Conference of Mayors declares.

"The cities take the position that the Federal government, through the CAA, cannot decide what airports are essential on the basis of population, number of registered aircraft, and other factors such as govern the national highway system," Better asserts. "They feel that they can better decide the question through closer familiarity with community and business needs."

Bettors has been receiving complaints on the so-called Stanton plan since March, when the CAA Administrator, addressing a luncheon in Detroit said:

"I suggest that the Federal and State governments become partners in building the nation's postwar civil airport system in general accord with principles worked out in building our national highway system. If the President and Congress authorize a Federal-aid airport program, funds could be apportioned to the States by the CAA on the basis of some accepted formula. Such a formula, we believe, should take account of four factors—area, population, number of registered aircraft, and the existing number of accredited airports in each state . . . Only projects fitting the National Airport Plan would be eligible for Federal aid, and CAA standards for location, layout, and construction for the class of airport proposed would have to be met."

Oppose New Laws

The cities are being urged by Bettors to oppose enactment of any new laws authorizing appropriations for airport development since, he says, the present Civil Aeronautics Act provides for such appropriations. Noting that Stanton, as well as some members of Congress, long have felt that a new Federal-aid airport program must originate on Capitol Hill, Bettors and Col. Edgar S. Gorrell of the Air Transport Association, have for several years been pointing up the fact that this is unnecessary.

Addressing the American Road Builders' Association in Chicago in 1940, Col. Gorrell said:

"Strangely enough the importance to airport development of the provisions of the Civil Aeronautics Act has been grasped only slowly by many who are vitally interested in the problem. Even during the last session of Congress a bill was introduced authorizing certain appropriations for airport development. No such authorizations and enabling legislation are necessary. Advocacy of such legislation wastes energy that should be devoted to obtaining such appropriations as may be necessary confuses the real issue, and runs the risk of unfavorable political consequences that might follow if a new enabling bill were defeated or were adopted with restrictive terms not appearing in the present law."

Twin Cities Plan

The Minneapolis-St. Paul Metropolitan Airports Commission, whose director is Robert Aldrich, former American Airlines airport development engineer, was created by a Minnesota Act July 1, 1943. The commission's jurisdiction embraces the cities of Minneapolis and St. Paul and all territory within a radius of 25 miles of the city halls of each city. This area is not affected by rulings of the Minnesota State Aeronautical Commission, as is the rest of the state.

The Commission is a public corporation. Its commissioners are the mayor of each city, a member of each city council, a member of each county board (Minneapolis and St. Paul are in different counties), a freeholder—citizen from each city, appointed by the mayor with council approval, and a member-at-large appointed by the governor of the state. The latter member, who lives in a county not contiguous to the Metropolitan area, is chairman.

None of the commissioners get salaries, although expenses are allowed. None may be interested in contracts entered into under the Act.

The Commission is empowered to acquire lands and personal property, including that through condemnation; construct and equip new airports; take over municipal airports; borrow money; issue bonds; accept money from the United States and the State of Minnesota.

Under the Act, the state auditor was authorized to levy taxes to produce \$100,000 for each taxable year from 1944 through 1953 and, pending collection, to issue and sell certificates of indebtedness—not to exceed \$1,000,000 in the aggregate. Taxes levied against the property of each city in any one year shall not exceed one mill on the assessed valuation, the Act provides. Bonds not exceeding \$15,000,000 may be issued in anticipation of receipts by the corporation of payments from cities, appropriations, rents, and profits—and shall bear five per cent interest. Bonds may be legal investments for public funds, such as school, university, or any other trust fund. Those issued by either city are guaranteed by the city issuing them.

Officers of the commission are the chairman, vice chairman (elected), secretary (not necessarily a member of the Commission), and treasurer (always the State Treasurer). The director of the Commission is appointed.

American Aviation stated in its issue of Jan. 1, 1939:

"Without doubt the most impressive argu-



CITED BY LEGION—Maj. C. C. Moseley, president of Cal-Aero, Mira Loma and Polaris Flight Academies, and Curtiss-Wright Technical Institute, is shown receiving an American Legion citation for distinguished service in the training of Army Air Forces pilots and mechanics. Legionnaire making presentation (back to camera) is Van D. Hogan, past commander, Department of California.

ment for Federal aid for airports has been set forth by the U. S. Conference of Mayors, of which Paul V. Bettors is executive director. A report, prepared by the Conference subcommittee on airports, members of which are O. M. Mosler, vice president of American Airlines; Maj. Jack Berry, manager of Cleveland Airport; Charles Morris, director of aeronautics for Connecticut; Lt. Richard Aldworth, superintendent of Newark Airport; Earl Mallory of the American Municipal Assn., and Bettors finds that the Civil Aeronautics Act of 1938 provides ample authorization for Federal airport aid without any further legislation. In Section 302 (a), the report said, the CAA Administrator is empowered to designate and establish civil airways and all necessary air navigation facilities and to acquire, establish, operate, and maintain in whole or in part 'air navigation facilities at and upon any municipal owned or other landing area.'

"The report points out that in the definition of 'air navigational facilities' it is very clearly stated in the Act that an air navigation facility includes landing areas, lights, any apparatus for the dissemination of weather information, radio-directional finding and the like. From the standpoint of safety alone, the report said, Congress has given complete authority to the CAA to aid airports and even to construct and maintain them if necessary."

Cities Need Guidance

Bettors says municipalities are "greatly in need" of a set of guiding principles from the CAA. For example, he says, they should have been advised many months ago not to lease their airports to airlines until they could be sure whether they were to be used for fixed-base, training, or commercial operations. He criticized the airlines for playing one city against another in the case of rival communities. He believes such rivalry as exists in the Fort Worth-Dallas area "impedes the progress of commercial aviation," and strongly recommends that contiguous, or nearly-adjacent cities campaign for the type of joint airport commission which is proving successful in the Minneapolis-St. Paul area. (See Column 2.)

Bettors observes that the Feeder airline idea currently "has the edge with most American cities."

U.S. Chamber Submits Referendum on Aviation Policies to Members

Carrier-Control Hit By ATA in Counter-Appeals by Letter

THE UNITED STATES Chamber of Commerce, which previously has sounded out business sentiment of the nation on international air transport operating plans, last fortnight submitted to its member organizations a referendum on airport policies and on the control of one form of carrier by another.

Recently recommended by the Chamber's Committee on Transportation and Communication, the carrier control question is expected to stir up considerable debate throughout the country.

The Air Transport Association of America, through its president, Col. Edgar S. Gorrell, promptly challenged the carrier-control proposal and sent to each member organization of the U. S. Chamber a letter urging them to vote against the proposal.

"Endorsement of the recommendations," Col. Gorrell said, "obviously would constitute direct or implied acceptance of the policy of 'integration' advocated by the Transportation Association of America and favored by railroads, certain steamship and other limited interests. It would inevitably lead to domination of all types of carriers by a few super-monopolies of transportation."

"Because of the great local, state and national importance of this subject, it is hoped that your members will not yield to pleas to advocate the breakdown, through either partial or total 'integration,' of the time-honored and experience-warranted national policy of preserving separateness, independence and vigorous competition between various types of carriers and between the independent units thereof until they shall have thoroughly examined and appraised all of the facts and factors having a bearing thereon."

As factual data demonstrating the undesirability of "integration," Col. Gorrell cited the Senate Interstate Commerce Committee's Report No. 26, Part 2, 77th Congress, 1st Session, dealing with "Investigations of Railroads, Holding Companies and Affiliated Companies."

Voting on the U. S. Chamber's referendum will conclude on July 24. Text of the questions follows:

Airport Policies

1. To replace the recent trend toward financing of airport construction mainly by the Federal Government and direct appropriations for particular airport projects, a Federal-aid airport system should be established.

2. Federal funds for airports should be matched by at least equal amounts of State or local funds for the same uses.

3. Federal funds should be restricted to grading, drainage, construction of runways, lighting and other safety features.

4. Federal funds should be appropriated by an equitable formula taking account of the needs of the various states and localities from the viewpoint of a nationwide airport system, with due con-

sideration to the provision already made of airports from defense and war expenditures.

5. State or local jurisdictions should be required to provide land, building and maintenance.

6. A major part of such a program should be reserved for periods of low business activity.

7. Administrative and financial responsibility for airport work should be concentrated in a single agency in each jurisdiction—Federal, State and local.

8. There should be airport planning surveys in each state to be conducted in cooperation with the Federal agency on the one hand and local airport authorities on the other.

9. Plans for airport systems should recognize that privately owned and operated airports constitute approximately one-half of the total number of existing airports, although a much smaller fraction of the total expenditures thereon, and that these private airports represent investments of great importance to future development of aviation.

10. Governmentally financed airport projects which would result in destructive competition with existing private airports serving the same areas and types of aviation service should not be undertaken.

11. Publicly owned airports should as soon as practicable be put on a self-sustaining basis.

Carrier Control

1. Operators of one form of transportation service should be permitted by law to operate other forms within reasonable territorial limits upon making an adequate showing to the appropriate regulatory authorities that it would be in the public interest and would not unduly restrain competition.

2. Operators of different forms of transportation should be encouraged, under proper safeguards in the public interest, to coordinate their services through contractual arrangements.



MAKES A SALE—Ruth Eaker, wife of the Army Air Forces' Maj. Gen. Ira C. Eaker, is shown selling Raymond G. Lochiel, treasurer of Pennsylvania-Central Airlines, \$100,000 worth of war bonds. Lochiel made the investment for PCA.

Ryan and Koch Named To Cooperation Group

Two important officials in government aviation circles recently were named to membership on the Interdepartmental Committee on Cooperation with the American Republics.

Selected by the State department, the aviation officials chosen were Oswald Ryan, a member of the Civil Aeronautics Board and Col. A. S. Koch, assistant to the Civil Aeronautics Administrator. Ryan recently was named chairman of the Permanent American Aeronautical Commission (CAPA). Col. Koch, the first of the Reserve officers in CAA to be called into active service, recently was returned to inactive service and immediately assumed the position as an assistant to Charles I. Stanton.

Move From Lunken-Cincinnati Airport Being Considered

Plans of three airlines—American, Delta, and TWA—serving Cincinnati, for airport facilities were under consideration during the fortnight.

Conferences between airline executives and local officials brought up the possibility of abandonment of Lunken Airport, Cincinnati County, Ohio, now being used by the lines and a transfer, at least temporarily to the Greater Cincinnati Airport, Boone County, Ky. Amos Culbert, vice president of American, who participated in negotiations was quoted as stating that the lines "preferred" to remain at Cincinnati, but that because of operational difficulties "probably would have to move to Boone County temporarily."

Meanwhile, engineers of the three lines estimated that a new airport on a Cornell Rd. site, near Cincinnati, would cost \$3,271,387 and return \$18,825 above fixed charges in the first year of operation.

Boone County officials, making their bid against Cincinnati County, declared that it would be agreeable to them to enter into a temporary contract with the airlines, declaring that a five-year period would be long enough to permit the full development of their airport. They have plans for immediate improvements, which are being held up pending action of priority applications on material. If the airlines contracted to use the field, Boone County officials declared, the priorities would be forthcoming immediately, permitting construction work to move ahead.

Air Education Stressed

The United States Junior Chamber of Commerce aviation committee, of which Kenneth E. Benson of Miami is chairman, will emphasize aviation education and airports in the coming year's program. Aviation education in primary and secondary schools, patterned after the program developed by the State of Nebraska and used successfully for the last four years, is a major item in the program. The committee also will acquire and have ready for distribution complete late information on airports, and will cooperate with the National Aeronautic Association in this regard.

New ATC Terminal Points To Capital as Traffic Hub

A HALF-MILLION-DOLLAR transoceanic air terminal, now under construction for the Air Transport Command at Washington National Airport, points to the nation's capital as a hub of postwar international air traffic.



Collins

This terminal the first of its kind designed especially for the handling of international traffic, will be ready for use of the ATC late in August. After the war, its facilities will be available to commercial traffic.

Located 600 yds. from the Airport's Administration building, the new unit includes: passenger terminal, operations, air freight, and mail buildings, centered in one composite structure; portable steel hangar 200 ft. by 200 ft. with shops for plane servicing and maintenance; fueling facilities; 50,000 sq. yds. of concrete ramp for plane parking; and an extensive parking area for motor vehicles.

On the exterior, the terminal building is coated with asbestos cement sheets. Approximately 75% of the exterior wall area is glass. The interior offices have Gypsum board walls and ceilings painted in bright colors. Floors throughout are black marbelized asphalt tile, laid in mastic on a concrete slab. The public address system will permit paging throughout the terminal by speakers operated separately or simultaneously.

For operational purposes the building is subdivided into distinct units, each surrounded by free land, making for easy postwar expansion. These sub-units are:

(1) The terminal building, housing all functions concerned with passenger and baggage processing and servicing. There are facilities for foreign detention, medical inspection, immigration, intelligence, radio message center, health bureau, customs inspection, censor, overocean travel, briefing, ticketing and manifesting, courier offices, and administrative offices.

(2) The operations building, containing

all functions of pilot and flight administration and servicing.

(3) The mail building, which includes all activities essential to the handling of diplomatic pouches, Government mail,



WAR HANGAR TO AID DURING PEACE—The modified theater of war hangar being built as part of the new ATC terminal at National Airport will be used by transoceanic commercial lines after the war.

soldiers' correspondence and other priority air mail.

(4) The air freight building, equipped for the handling of priority cargo.

The hangar at the new terminal is a modified theater of operations type. ATC plans to vacate Hangar No. 6 at the National Airport when its new facility is completed. The new hangar installation will include machine, propeller, hydraulic, paint, wood, radio, and electrical shops, parts supply rooms, engineering offices, flight clerks' rooms, and parachute and life raft rooms.

Collins in Command

Col. Frank H. Collins is in command of the ATC's Special Missions unit, Washington National Airport Army Air Base. In addition to conducting overseas transport operations, the unit inspects, maintains and conditions planes assigned to it and performs modifications to suit planes to their individual climatic, geographic, and military needs.

The new terminal is being built under contract for the Army by the Charles H. Tompkins Co. of Washington. The designer is Charles M. Goodman, Principal Architect, Supply and Service, ATC.

"Hi, Jerk!"

An Air Transport Command Officer who returned recently from a tour of our air bases in Russia relates that when an American lands, and whether he is a general or a private, the Russians rush out, grin broadly, and greet him with about all the English they know which is:

"Hi, Jerk!"

Double Indemnity Held Legal in Plane Death

The New York Supreme Court overruled the Guardian Life Insurance Co. of America and sustained the right of the beneficiary of an airline crash victim to collect double indemnity on a policy, despite a specific stipulation in the policy that double indemnity could not be collected if the policyholder met death as an air passenger.

The policy in question included a clause providing that double indemnity "shall not be payable if the Insured's death resulted from . . . engaging or participating as a passenger or otherwise in aerial navigation or submarine operations or service connected with either."

The Court held that the language of this exclusion clause "is such that the average person applying for the insurance and reading the policy and clause would feel the exclusion applied to an occupational casualty and that he was insured against the risk of such a casualty" as a crash while an air passenger.

Swenson Gets An Assistant

The National Aeronautic Association announces that Jack Frost, public relations director of the Hecht Co., Washington department store, has been named assistant to Lowell Swenson, manager of NAA. Frost was an advertising man in mercantile establishments in the south and mid-west before going to Washington in 1938.

Ruling on Licensing

The Minnesota Commissioner of Aeronautics is authorized to license air schools giving both ground and flight instructions, it is maintained in an Opinion by the State Attorney General. Such air schools need not be licensed as trade schools. A license from the Commissioner of Education is not necessary, if a license has been obtained from the Commissioner of Aeronautics.



WORLD TRAFFIC TO FLOW THROUGH HERE—This is a model of the passenger terminal and operations unit of ATC's new international terminal which will serve passengers going to many parts of world.

Discard Pound-Mile Basis For Mail Pay; Sell Space

CONSIDERATION should be given to putting the airlines on the same basis as the railroads in receiving payment for the carriage of mail, according to Charles P. Graddick, director of United Air Lines' air cargo department.

This would represent a complete change in the method of paying the airlines for carrying mail. Most aircarriers are now paid on a pound-mile basis, receiving .3 mill for carrying one pound of mail one mile. In the case of the railroads, the Post Office buys a certain amount of space in railroad cars, purchases being made in units of three lineal feet—three feet on both sides of the aisle. This three-foot space, when filled to a depth of six feet, will hold approximately 50 sacks of mail. Thus, a 60-ft. car holds 1,000 sacks. The Post Office always contracts for a certain minimum amount of space, and pays for the unit regardless of whether or not it is completely filled. During peak periods, additional space is requested.

Former P. O. Superintendent

Graddick, former superintendent of air mail for the Post Office Dept., believes that this method of payment would be more equitable than the present pound-mile system. He also asserts that the airlines would be assisted in their load computations, knowing that a certain minimum amount of space must be set aside for air mail, and should experience no difficulty in providing more space for peak loads. The system, he believes, might prove particularly valuable when used on all-cargo planes.

Discussing many aspects of the mail-express situation with *American Aviation*, Graddick went strongly on record in favor of establishment of an air parcel post system. He sums up his thoughts on this subject as follows: "Air mail, our first cargo, is assured. You have had it, it has proven its worth and, in my opinion, it should and will be expanded to cover other classes of mail.

"It is distressing that those persons and government officials who have been critical of the airlines for having engaged the Railway Express Agency to make it possible to extend the benefits of air service to some 23,000 cities and towns throughout the country instead have not exerted their efforts to enable all of the 46,000 cities and towns throughout the country to get the benefit of air service through air parcel post. If this country has gone to the trouble to provide the benefits of air mail and air transportation for its citizens why should it not use its other facilities coordinately to extend to as many as possible the benefits of air service?

"Why should not a farmer be able to have shipped to him by air, from any part of the country, rare seed or special nursery stock or pedigreed day-old chicks, and have such products delivered to his door by his own rural carrier? If, in the midst of a spray period or harvest season he should have a machinery breakdown of his spraying or har-

vesting equipment, and should be unable to get parts locally, why should he not be able to telephone or telegraph for a replacement to be shipped to him by air and have it delivered to his door without the necessity of a trip to town at a time when every moment is precious to him?

"I believe that once the true conditions are made clear to Congress they will provide that service for our great farm population and for the 23,000 towns which have no air express."

Operations of all-cargo planes during the war has been very successful, Graddick says, revealing that UAL's four cargoliners carried, during the first four months of 1944, about 38% of the total UAL mail and 25% of the entire system's express. Air mail pound-miles performed by only these four planes in January were 787,787,007 (34.2% of all mail carried by UAL), while average load was 3,871 lbs. In the same month, the same planes performed 148,732,434 pound-miles of express service, 23.2% of the UAL total, and average load was 683 lbs.

Figures for February were 837,858,537 pound-miles of mail service (38.8% of total with average load of 3,815 lbs.) and 134,961,771 pound-miles of express (25.6% of total with average load of 572 lbs.). In March, the figures rose to 950,845,818 (40.1% with 4,180-lb. average) and 172,328,771 (26.5% with 677-lb. average). April totals were 907,440,435 (39.2% with

4,043 average) and 141,818,807 (23.6% with 590 average).

Some idea of how large these loads are may be seen from the March figures, a month in which average mail and express loads on all cargo trips totaled 4,857 lbs.—equivalent to carrying 24 passengers and baggage.

Despite this wartime performance, however, Graddick does not see an immediate need for giant postwar cargo planes. "We'll continue to have air express as we know it today, carried on passenger planes, with cargo planes perhaps being used during peak periods," he predicts. Further, he believes that both airlines and manufacturers would do well to explore the possibilities of developing a large single-engined cargo plane.

"I've reached no definite conclusion of future air cargo rates, but I believe they can be cut to at least half of what they are now—maybe to 25 or 30c a ton-mile," he says. "If they get below 20c we'll get some nice tonnage out of perishables." Even with somewhat higher rates, some perishables will be transported—mushrooms, tomatoes, strawberries, boysenberries and loganberries. The last two mentioned have a 48-72 hour marketing period, making fast transportation essential.

Transportation of perishables will be on an airport-to-airport basis, the shippers delivering produce to the airport, the buyer picking it up at the airport, Graddick believes. In this way, a cheaper rate will be possible.

"It will take much hard work to fully develop air cargo," he concludes.

Odell Opens Office

Capt. L. L. Odell, who was consulting engineer for Pan American Airways for many years, has opened his own engineering office at 60 East 42nd Street, New York.

Revenue Passenger-Miles Expected To Increase 20% in First Six Months

REVENUE PASSENGER-MILES flown by the domestic airlines during the first six months of 1944 are expected to exceed 888,600,000, an increase of 20% over the 735,300,000 passenger miles flown during the first half of 1943 according to Col. Edgar S. Gorrell, President of the Air Transport Association of America.

Gorrell estimated mail pound-miles at 41½ billion, which would be more than

30% above the almost 32 billion in the first six months of 1943. Mail pounds carried are expected to reach more than 65½ million, as compared with 50½ million in the like period a year ago, a gain of more than 29%.

Domestic airline traffic estimates for the first six months this year as compared with like periods of 1943 and 1942 follow:

Item	First Half 1944	First Half 1943	First Half 1942
Revenue Passenger-Miles	888,600,000	735,341,450	726,646,588
Mail Pound-Miles	41,572,000,000	31,936,867,978	17,538,843,382
Mail Pounds Carried	65,600,000	50,504,847	28,607,256
Express Pound-Miles	15,227,000,000	14,580,244,112	9,704,511,266
Express Pounds Carried	31,500,000	28,776,456	18,438,751

Recent figures announced by Civil Aeronautics Board, give the following comparison between April of 1944 and

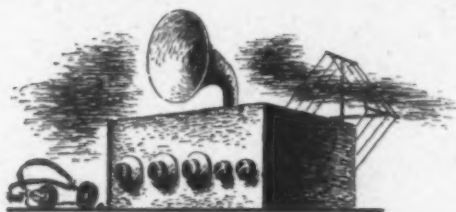
Revenue Miles Flown	10,034,017	8,419,412
Revenue Passenger Miles	154,626,721	131,737,268
Mail Pound Miles	7,027,621,464	5,753,003,046
Express Pound Miles	2,405,375,010	2,769,444,650
Revenue passenger load factor (per cent of seats occupied)	88.64	88.58

1943 relating to domestic airline operations:

	Apr. 1944	Apr. 1943
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Express Pound Miles	2,405,375,010	2,769,444,650
Revenue passenger load factor (per cent of seats occupied)	88.64	88.58

Let SIMMONDS take over part of the Control Room Job

1. Contrary to the trend in other technical fields, the number of instruments and controls tends to increase with the power and size of aircraft. But just as complex conditions in other fields are being handled automatically, the Simmonds-Hobson Automatic Engine Control provides for the known variety of conditions in aircraft engine operation.



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STRONG, RESISTANT, WORKABLE

PLANE DESIGNERS wanted a higher strength aluminum alloy for increased performance. Aircraft shopmen wanted an aluminum alloy of good workability in order to reduce production time. Users of aircraft wanted an aluminum alloy with good corrosion resistance, to withstand *any* atmosphere and climate.

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R-301 is a high-strength aluminum alloy core, integrally bonded with a corrosion-resistant, medium-strength aluminum alloy cladding. The core and cladding alloys respond to the same heat treatment—resulting in a final product possessing high strength.

R-301 in the solution heat treated temper is stable and more workable than any other high-strength aluminum alloy in the corresponding temper—thereby eliminating costly post-forming heat treatment and consequent distortion of aircraft parts.

R-301 is being produced in three tempers, suitable for a wide range of applications. Inquiries are invited. Reynolds Metals Co., Aluminum and Parts Div., Louisville, Ky.

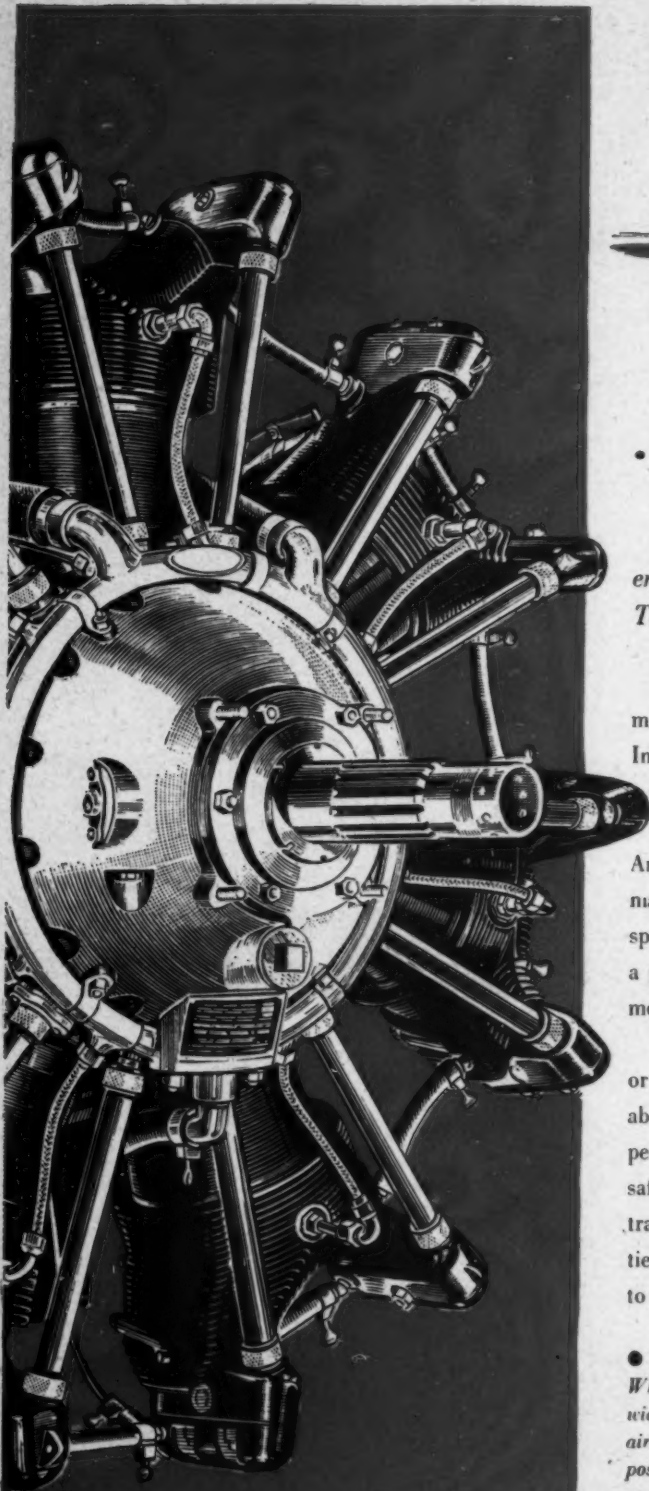
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(Upper right) Heavy, bending rolls, forming an armor hood for the pilot's compartment. R-301 can be cold-rolled to shape.

(Lower right) R-301 drills and routs to sharp, accurate contour. The hard surface cladding reduces the hazard of accidental scratching.



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MAYBE SO, but we're satisfied. Publicity doesn't prove much about a plane engine—but performance records do! In twin-engine trainers under hard student handling, these Jacobs engines take more take-offs and spend more time at full throttle than any engine in combat service... And then stand up for more than 1,000 hours between major overhauls—performance *three times* the original specification or expectation. That's air time enough to take a plane more than 150,000 miles. Ever hear of an automobile engine putting on so much mileage *between overhauls*?

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● JACOBS AIRCRAFT ENGINE COMPANY also manufactures Pratt & Whitney engines used by both the Army Air Forces and Navy in a wide variety of services... Largest manufacturer in the world of aircraft engines of medium power rating, Jacobs has in prospect postwar models of both higher and lower horsepower than those now made and interesting power applications for uses other than aviation. Inquiries are invited... Jacobs Aircraft Engine Co., Pottstown, Pa.



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Oldtime Planes Do Final Curtain Call Carrying Big Loads in Alaska

NOWHERE in the United States and its possessions will modern planes, being declared surplus by the Army, be more welcome than in Alaska.

This is the viewpoint of Charles Planck, chief of the Press Section of the Civil Aeronautics Administration, who recently returned from a tour of the 7,000 miles of CAA Federal Airways in Alaska. Planck reports having seen many derelicts of the air still performing yeoman service in the North country, most of the flights directly connected with the war effort.

The history of aviation in Alaska is a saga of the transportation age. Unlike Continental United States, there was no easy transition from ox cart to horse and buggy, from horse and buggy to the auto, from stage coach to the railroad train. Even today Alaska represents the extremes in transportation—the dog sled and the airplane. The day of the musher and his huskies may well be on its way out because there can be no compromise between these great extremes in the mode of travel.

When the Army recently released about a dozen old Boeing 247's, some of them were assigned to the airlines of Alaska. This, Planck states, was a shot in the arm for Alaskan commercial aviation and offers only a hint of what may be in store for this area when the commercial plane comes into its own in the postwar era. The plane may well mean to Alaska what the coming of the iron horse meant to the West.

Panorama of Old Friends

"In Alaska, the planes that have grown old in the States are in constant use, and it is, in effect, the last stop this side of the graveyard for airplanes. One sees a panorama of old friends aeronautical on the airport at Anchorage where several airlines have their headquarters," Planck said.

It was at Anchorage that Planck saw an old aerial patriarch—a Boeing 80 A—three motored, biplane which served the airlines of the U. S. briefly between 1928 and 1930. While this plane is not now in airline service, it is being used by the Morrison & Knudson Co., contractors, in building airports. In the building of Northway Airport everything had to be taken to the site either by caterpillar tractor from about 55 miles away or over the trackless expanse in deep snow or by air. Most of it went by air. Even trucks, tractors, piling and 3,000 tons of paving went by air and most of it in the old Boeing. Although it has a wide door, enlarged for freight handling, it would not admit the metal bodies of two-ton trucks. These trucks were cut in two and placed aboard the plane. Once unloaded at Northway, the two sections were welded together.

Another old relic of U. S. domestic air transportation is the Pilgrim, a single-engined monoplane which was the first plane to be steam heated, and which American Airlines introduced around 1931. Alaska Airlines still uses a Pilgrim.

Planck saw Bellancas and he thought of the famous old Columbia which Chamberlain and Levine flew to Germany; seven-place Stinsons, single-engined; Stinson

son tri-motors, both high and low winged and the durable, almost indestructible Ford Tri-motors.

Figuratively war has enabled these old planes to win their service stripes before answering a final curtain call which will mark the end of their interesting careers. And while war has given them an opportunity to leave the scene in a dramatic way, war also has hastened their departure. Inability to obtain replacement parts and the dire necessity for keeping some of these ships in operation has resulted, in some instances, in cannibalizing the old timers to keep others in the air.

Charter is a big business in Alaska, Planck stated. Every Alaskan recognizes the ease with which travel is shortened by plane. At most remote places, such as mines, canneries and logging camps, the Alaskan bush pilot always can find business. And usually he can find a way to set his plane down whether a landing strip is provided. Travel by air along the 7,000 miles of CAA airways is done by everyone from workman to capitalist.

Bush Pilots Know Way

The time is not far away when two-engined planes will replace single-engine equipment on most of the regular runs. Considering the rugged terrain, the additional safety factor undoubtedly will be a boon to Alaskan air travel.

"On almost any Alaskan flight, the route passes over mountain ranges," Planck explained. "Alaskan pilots know their passes through these ranges like a kid knows the alleys in his neighborhood. They fly through these passes casually—an experience that is terrifying to a novice at flying. They claim there is no danger, because somewhere below, in mountains or muskeg, there is a place to land where complete crack-ups can be avoided.

CAB Opens Alaska Office

Raymond W. Stough, director of the Civil Aeronautics Board's Economic Bureau, is operating an office in Anchorage, Alaska, as a special assistant to the Board. The decision to open the office was in recognition of the importance of the growth of air service in the Territory.

In 1939, Stough held the first Board hearings on route applications and policy matters in Alaska. Based on his recommendations, the Board continued the investigation, and assigned further hearings which led to the issuance of certificates to Alaskan carriers in 1942. Certain phases of the plan recommended by Stough could not be put into operation until an office was opened in Alaska.

It is understood that V. Rock Grundman, of the Board's public counsel office, Robert J. Bartoo, of the Rates and Audits section and LeRoy Huntington, of the Service and Tariff section of the CAB Economic Bureau, will accompany Stough.

Deep snow deposits or river-bottom sand bars are always within their reach."

Like something akin to a great community or regional tragedy, the recent destruction, by fire, of a hangar at Anchorage with the resulting loss of five airplanes, cast a pall over civilian aviation circles throughout Alaska. They were old planes being used by Morrison & Knudson in the building of airfields in the Territory, but aviation people in Alaska, knowing the problem of replacement, took this as a personal loss.

Planes, built out of war necessity, may someday be a drug on the market but it would be difficult today to impress this fact on the Alaskan bush pilot. All he wants to do is to get his hands on the controls of some modern equipment to show the aviation industry what the plane can do for the development of a great area which, up to now, has been comparatively inaccessible to man because of the limitations of surface transportation.

Vintage of 1927 Still Used In Frozen North



This Bellanca, vintage of about 1927-1930, is on the sea ice at Nome. The same day this plane of Wien Airlines had to hunt a hillside at Candle with enough snow to make a landing. Returning, it picked up its wheels at Nome and flew to an inland field still covered with snow to change to "summer" landing gear.

Stratoliners Undergoing Changes for Use by TWA

B-17 Wings Being Put On; Payload Will Be Greatly Increased

THE FIVE BOEING 307 Stratoliners, four-engined transport planes with supercharged cabins, which Transcontinental & Western Air, Inc., turned over to the Army at the start of the war, are being returned to the airline.

On orders from the Army they will undergo considerable modification by Boeing Aircraft Co. at Seattle before being put into use by TWA. Two of the five Stratoliners already are at Seattle and work is being rushed on them. Others will arrive in Seattle soon.

The wings are being replaced with B-17 wings, modified, which will increase the plane's efficiency. It is planned to lengthen the fuselage and add approximately 9,000 lbs. gross weight, which will mean a substantial increase in payload.

Operating costs are expected to be lowered from 12c a ton-mile to 10c.

The first plane is scheduled to be delivered to TWA about Sept. 1, with the other four to follow.

Of the nine Stratoliners built by Boeing, TWA purchased five, Pan American Airways three, and Howard Hughes retained one for his own use and research. The PAA Stratoliners are in service in the Caribbean area.

One-Minute Stops Urged for Feeders to Overcome Rivals

If the feeder line plane is to effectively meet the competition of surface carriers in flights averaging 50 miles between points, it may mean that the feeder airline operator will have to strive to achieve one-minute stops.

This is the opinion set forth by Jerome Lederer, chief engineer, engineering department of Aero Insurance Underwriters in a News Letter circulated throughout the industry.

The letter says in part:

"Feeder airline operators must introduce a new operating technique to survive. According to one study, a feeder line plane will average only 60 m.p.h. with 50 mile stops and five minutes per stop. Unless improvements are made in current practices, feeder lines with frequent stops will have little to offer over automobile and train travel. This is due principally to the time that the plane is on the ground at each stop.

"Special studies in approach, quick servicing, rapid emplaning and deplaning of passengers, accelerated handling of cargo and baggage, and the dissemination of flight dispatch information might show how to overcome this obstacle. Time on the ground must be reduced to a minimum. Why not strive for a one-minute stop as our objective? Subway trains in New York average 17 seconds per stop.

"This raises some controversial issues. It may mean: no circling prior to landing (requiring topnotch traffic control); a minimum of taxiing after the landing roll (passengers brought to the runway in a bus or trailer—embark and disembark on the side of the runway, no ramps); runways will have to be long enough to allow take-off without requiring the ship to taxi back; a system of light signals on the runways to signal for take-off (reduce radio conversation); engines will be kept running, time to stop and start engines will not be available (requiring reversible pitch propellers or pusher airplanes so passengers won't be compelled to pass through the slipstream); refueling with engines running may be necessary; large doors will be required (so two people can use them simultaneously); separate cargo bins for each stop; an enormous weather data board on top of the administration building that the pilot can see from the runway; and this is only the beginning."



SERVICE AWARD—United Air Lines' military training center at Oakland, Cal., recently won the U. S. Army's Certificate of Service Award for having trained 5,000 aircraft technicians for the AAF. D. L. McDaniel, left, is shown receiving the award from Maj. Gen. John F. Curry, head of the AAF's Western Technical Training Command.

Airlines Get 15 More Transports; End of Priorities Not in Sight

ALTHOUGH THE AIRLINES have received another 15 transport planes since the tabulation was printed in the July 1 edition of *American Aviation*, there was no indication that priorities on air travel are to be removed in the near future. The return of the 15 brought the total now available for airline operation to 257.

One official of the Civil Aeronautics Board expressed the view that to remove priority regulations now would be "almost disastrous in its results." Priority displacements have decreased with the return of planes but the airlines are far short, and will remain short for some time, of having enough equipment to handle normal traffic, he said.

Other sources pointed out that in January, 1942, when the airlines had about 360 planes, a priority system was necessary—at a time when the war program was not yet fully under way. The airlines now have 257 aircraft. It is also learned that after the airline fleet had been decreased to 200, the CAB certified to the Office of Defense Transportation that the airlines needed about 95 more planes to enable them to carry essential priority traffic without substantial displacement, that they needed about 165 (or a fleet of 365) to meet adequately the needs of war traffic, and that a fleet of about 570 would be needed to transport normal traffic at normal utilization and load factors.

In the allocation of June 28, the 15 planes were divided between the airlines as follows: United 6, American 5 and one each to Northwest, Eastern, Braniff and PCA. Three of the 15 were DST (sleeper types) two of which went to American and one to Eastern.

Following is a table showing transport planes, all categories, in airline use in 1942 and either in use or returned for use in 1944:

	May 18 1942	July 1 1944
American	74	63
United	52	50
TWA	40	36
Eastern	39	29
PCA	18	14
Braniff	15	11
Northwest	14	13
Delta	9	7
Western	12	7
C & S	6	6
Colonial	4	4
Northeast	6	3
Continental	6	4
National	5	4
Mid-Continent	9	4
Inland	5	2
Total	314	257

Eastern Recommended

Eastern Air Lines, Inc., inadvertently was not included in the list of carriers mentioned in the July 1 issue as having been recommended by Allen Dean, of the Detroit Board of Commerce, for routes to Detroit in the Detroit-Memphis-St. Louis case. While endorsing the recommendations of the examiners as far as they went, Dean strongly recommended in favor of Eastern and United and asked the Board to bear the city's need in mind when it considered these carrier's route applications in this and subsequent proceedings.

Great Lakes-Florida Case Introduces Surface Issue

Much-Debated Question Reaches Trial Stage; Justice Dept. Active

THE SURFACE CARRIER ISSUE which has been a much-debated question in aviation circles during the past year finally reached the trial stage in the recent Great Lakes-Florida route proceeding.

This issue came to the forefront when South East Airlines presented its case for a regional air transport system extending from Jacksonville on the south to Cincinnati on the northwest and Norfolk on the east, via some 40 intermediate points.

It was the first time that the Department of Justice took an active part in a proceeding, based on the monopoly of transportation and restraint of trade issues. Most of the questioning centered around Hamish Turner, vice president, general manager and director of South East who is general manager of Carolina Scenic Coach Lines and is owner and operator of Carolina Stages. Aside from the efforts of opposing counsel to bring out all possible evidence touching on Hamish's connections with both air and surface transportation companies, Sadie B. Arbuthnot, Edward Dumbould and James A. Tomlinson, lawyers for the Department of Justice, spent some time in questioning him and other South East witnesses.

All South East witnesses claimed there is no connection between the airline company and the bus companies. R. Z. Cates, president of the company, who was a World War I flyer in Capt. E. V. Rickenbacker's famous 94th Aero Squadron, testified of the need for better transportation in the Piedmont area. Cates is also president and director of Arkwright Mills, a partner in Carolina Cotton Co., and director of Raycord Corp. Under questioning, he admitted that if business warranted it, South East might some day become a trunkline operator.

Clifford Ball Testifies

Clifford Ball, founder of Pennsylvania Airlines, predecessor of PCA, testified for South East on operating and traffic problems. He was questioned by opposing counsel particularly regarding operating cost data on Beechcraft 18-S passenger planes and other planes of that type. When he introduced figures that had been furnished him by the manufacturers, Robert L. Griffith, counsel for American, asked permission of Examiner Ross I. Newmann to furnish for the record engineering studies made by American's engineering staff concerning Beechcraft operating costs. Henry P. Bevans, counsel for TWA, made a similar request. These requests were granted, over the objections of Fred W. Albertson, counsel for South East, who said South East had furnished this cost data in exhibits exchanged before the hearing started and that opposing counsel had had ample time to answer in rebuttal exhibits.

South East's exhibits estimated the operating expenses of a plane of the Beechcraft 18-S type at 30 cents per mile before depreciation and 32 cents per mile after depreciation.

Dr. C. K. Brown, professor of Economics of Davidson College and Dean of the Faculty of that institution, and H. K. Gilbert Jr., president of the company, were the principal witnesses for State Airlines, Inc. which applied for routes from the Piedmont area north to Detroit and southeast to Jacksonville, Fla. Dr. Brown sponsored a score of exhibits relating to economic data, traffic potentialities and inadequacy of surface transportation.

Gilbert testified: "If our applications are granted, a new milestone in aviation will have been reached. The results of authorizing these operations will have indeed justified the Board's six-year interval of granting no permanent certificate to any new domestic carrier for passengers, property and mail. It will mark the start of a new era of concentrated, logical, and sound air transportation development for the nation and the greatest development in the history of transportation that the southeast has ever had for its benefit."

Stops 50 Miles Apart

State proposed to operate Douglas DC-3's and submitted exhibits showing annual operating expenses of \$5,115,683 or 72 cents per revenue mile. All stops, involving proposed service to 64 cities, would be at least 50 miles apart.

The last of the non-certificated applicants to present their case was Virginia Central Airlines. Abe Cohen, president and W. G. Burnette, counsel and W. W. Edmondson appeared as witnesses. Virginia Central proposed to operate Douglas DC-3's and 10 or 12-place Lockheed type planes over routes between Lynchburg and the following points: Columbus, Atlanta, Chicago, Cincinnati and Norfolk, via many intermediate points.

J. C. Stratton Jr., an executive assistant of TWA, testified briefly as to the diversionary effects some of the proposed routes would have on TWA operations.

PCA and National were the last of the certificated carriers to put in their cases.

Pennsylvania-Central Airlines Corp. waged a hard fight for more direct routes to the south and for extensions from the Piedmont area into Florida. While PCA would parallel a considerable portion of Eastern's route 10, C. Bedell Monro, president of PCA, enunciated the theory that point to point competition was in the public interest if the traffic potential warranted it and if the carrier from whom this traffic was diverted was able to stand the same on the basis of its system earnings. He said that PCA would divert less than one percent of Eastern's and National's business in Florida.

G. T. Baker, president of National, testified in behalf of two routes requested by his company between Jacksonville and Detroit. During this appearance on the stand, William I. Denning, company counsel, sought to draw from Baker some comment with reference to the attack which

Reaping Dividends

After having been the world's supplier of baseball equipment for many years, the United States is now reaping returns for popularizing the game in foreign lands. Sports equipment from factories of other nations is now flowing into the country to augment war-depleted stocks. Pan American Airways reports that many thousands of baseball gloves are being flown in from Mexico. Most of them are being distributed through the Army and Navy canteens to servicemen.

had been made on National earlier in the hearing by Capt. E. V. Rickenbacker, president of Eastern Air Lines.

"Do you have any apology for the fact, if it is a fact, that clerks and grease monkeys in your organization have become executives overnight," Denning asked.

"I think that would be a very commendable policy. It is a policy of our company to recognize the abilities of clerks and grease monkeys and to promote them in accordance with their ability. I may mention the story of the rail splitter who became President of the United States, as an outstanding example of recognition of ability symbolic of the American way of life. I might add that the President of Eastern Air Lines used to be a chauffeur, he had a rapid advance," Baker replied.

The need for direct one-carrier through service between Chicago and Florida and Detroit and Florida together with a demand that sky routes across the mountains be authorized to offset poor ground transportation in the Piedmont area appeared to be focal points about which much of the testimony hinged in this case.

Nearly three weeks were required to hear all of the applicants and witnesses in this case, which ended June 30. After a short vacation, Examiner Newmann will begin his study of the voluminous record, preparatory to writing a report with recommendations in one of the hardest fought cases that has been heard in the last few months. D. Franklin Kell served as public counsel.

9 Different Proposals

The testimony brought out abundant evidence of the need for better and faster air transportation between the Great Lakes area and Florida. All of the six air carriers and three non-certificated applicants had a different proposal for best meeting this transportation deficiency.

Testimony revealed that rail and bus service in the Piedmont area is wholly inadequate in terms of modern travel and that the shortest and quickest route from the Great Lakes to Florida was a three-carrier connecting service.

Diversion occupied an important place in the considerations of many of the applicants. Many widely separated conclusions were reached by the parties as to the extent of diversion that might be expected from the granting of certain routes.

Los Angeles-San Francisco Area Attractive to American Airlines

WHILE ONLY NINE new route applications were filed with the Docket Section of the Civil Aeronautics Board during the last fortnight, Section employees were kept busy with an unusually high number of applications relating to various administrative and regulatory requirements, particularly interlocking relationships and amendments.

American Airlines, Inc., apparently accepting the invitation which may be implied from some of the Board's recent decisions where point-to-point competition has been authorized, filed for a route between Los Angeles and San Francisco-Oakland. There are now three carriers—United, Western and TWA—in this area and it was in certifying Western and TWA between Los Angeles and San Francisco that the Board first announced the "point to point" competition theory.

Eastern filed for new points in the New England area where the company recently received an extension from New York to Boston. Western Air Lines continued to file for routes in the northwest in territory served by Inland Air Lines, Inc.—the company which Western recently purchased.

A brief summary of the applications filed follows:

American Airlines, Inc.

This carrier filed an application for an extension of its Southern Transcontinental route from Los Angeles to San Francisco-Oakland. In making the announcement, A. N. Kemp, president, pointed out that American is the only American flag air carrier between Los Angeles, San Diego and Mexico and that this application, if granted, will make possible, for the first time, through direct one-carrier service from San Francisco-Oakland to Monterrey and Mexico City. He said the approval of this application would also provide, for the first time, through one-carrier service between San Francisco-Oakland and cities as far east as Baltimore. (Docket 1469)

Eastern Air Lines, Inc.

This carrier filed an application requesting that its certificates for Routes Nos. 5 and 6 be amended to include service to the following points: Stamford-Norwalk, Conn.; Hartford, New Haven, Providence and Brockton. The applicant states that in connection with its new certificate between New York and Boston, service to these towns, due to a community of interest between them and other points on Eastern's system, would be in the public interest. (Docket 1473)

United Air Lines, Inc.

This company filed an application asking CAB to amend its certificate for Route 1 to include Cedar Rapids, Ia., as an intermediate point. (Docket 1467)

Western Air Lines, Inc.

This carrier filed two new applications for routes in the west and northwest. Routes asked are: Cheyenne to Omaha, Huron to Mankato, Casper to Omaha, Casper to North Platte, Omaha to Brookings, Scottsbluff to Ainsworth. (Docket 1465) and a route between Great Falls and Seattle, via Spokane, Coeur D'Alene and Kellspeel. (Docket 1466)

Acme Air Express, Inc.

This applicant of New York, 16, N. Y., filed for a certificate to operate an air express forwarding service between any and all points in the U. S. The company would perform a pickup and delivery service at all important air terminals, and would integrate its operations with that of the Acme Fast Freight System of which Thomas A. Bradley is head. Applicant claims that Acme Fast Freight handled in 1943 1,016,833 tons of freight for which is received \$43,411,760 in revenues, of which approximately \$250,000 represents express matter. (Docket 1479)

B. K. S. Flying Service

Located at Erie County Airport, Fairview, Pa., this applicant filed an application for five routes as follows: two different routes between Erie and Philadelphia and return, two circular routes originating and terminating in Erie and one between Erie and Harrisburg and return. John J. Kosak and Steve Stasenka are partners in this enterprise which has been operating a training school for the Army. The company owns eight two-place planes, lists assets of \$35,000 and its only liability consists of a mortgage for \$1,500. (Docket 1478)

B & W Lines, Inc.

This company filed an application requesting 15 helicopter routes in the Boston area. The company plans to operate from land adjacent to the bus terminals of the Boston, Worcester and New York Street Railway Company and over established routes in an area bounded by Haverhill, Mass., New Bedford, Providence, Springfield and Hartford. Paul T. Babson is president and Leland L. Waters treasurer of the company. (Docket 1471) Notice was filed that in the Boston, Worcester and New York Street Railway company plans to withdraw its application for routes in Docket 1219.

Cotton Belt Airlines, Inc.

This company of Pineville, Ky., filed for air transport routes to carry mail and property between the following terminal points, via various intermediate points: Nashville and Tallahassee, Birmingham and Tallahassee, Knoxville and Birmingham, Ala., Greenville, S. C. and Montgomery, Ala. Edward Wilson is president of the company. Applicant proposes to use single-engine aircraft. (Docket 1472)

Western Washington Airways

Applicant of Aberdeen, Wash., filed for three air transport routes between the following points, Aberdeen to Seattle, via Olympia; Aberdeen to Portland, via intermediate points on a coastal route and Aberdeen to Portland, via intermediate points on an inland route. The applicants, Lieut. Robert C. Bowerman, 716 W. 4th Street, Aberdeen and Corp. Harvey Emerick, Box 382, Buckley, Wash., both of whom are now in Army service, said a suitable type of aircraft would be used if a certificate is received. (Docket 1468)

Non-Route Applications

United Air Lines, Inc.

This carrier filed an application asking the Board to enter a restriction in the certificate of TWA governing service between Albuquerque and San Francisco which will prohibit its transcontinental planes from "laying over" more than 45 minutes at Los

CAB Examiner Resigns

Berdon M. Bell, a CAB trial examiner since Oct., 1940, resigned July 8 to open a private law office in Washington. Bell presided last in a prehearing conference affecting new route applications in New England. Previously he wrote the examiner's report and recommendations in the Memphis-Oklahoma City-El Paso case.

Angeles. UAL complained particularly about Flight 15 which originates in New York and which is scheduled to reach Los Angeles at 5:33 p. m. and which does not depart non-stop for San Francisco until 7:15 p. m. "If departures at Los Angeles can be delayed for periods as long as one hour and 42 minutes, TWA will engage in local business by selecting attractive departure times for local passengers to the prejudice of through passengers wanting to make the two hour flight to San Francisco," the application filed by United stated. (Docket 1477)

Western Air Lines, Inc.

Five applications were filed asking approval of an interlocking relationship involving officials of Western Air Lines, Inc. in their duties in the operation of Inland Air Lines, Inc. The officials involved and the docket numbers assigned to their respective applications were: L. H. Dwerlkotte (1484), Charlie N. James (1485), Thomas Wolfe (1486), Paul E. Sullivan (1487) and J. J. Taylor (1488).

B & W Lines, Inc.

This company filed an application for approval of an interlocking relationship existing between B & W and Boston, Worcester and New York Street Railway under the provisions of Section 408 of the Act. (Docket 1474)

Fitchburg & Leominster Airways, Inc.

This applicant filed an application under Section 408 of the Act asking approval of an interlocking relationship wherein Henry G. Bowen serves as an official in the new airline company and the Fitchburg & Leominster Street Railway Co. (Docket 1476)

Thomas E. Gordon

This applicant for airline routes filed an application under Section 408 of the Act asking Board approval of an interlocking relationship in connection with his interest in the Florida Aeronautical Supply Co. (Docket 1481)

Mountain States Aviation, Inc.

Applicant filed an application asking Board approval of an interlocking relationship with reference to its pilot training, sales and repair service. (Docket 1480)

Ryan School of Aeronautics

CAB issued an order severing that portion of an application filed by Ryan School of Aeronautics in Docket 1368, proposing service between Los Angeles and Honolulu, from the West Coast consolidated proceeding, Docket 851 et al and assigning the severed portion Docket 1475.

The portion of the application of Southwest Airways Co., Docket No. 1404, relating to Section 406 and assigned it to Docket No. 1483 by a Board order.

The Board severed from the application of Albert L. Zimmerly in Docket 1407 that portion which requests approval under Section 408 of the Act and assigned the severed portion to Docket 1482.



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Not even the "superman" of the "master" race can hear the gliders . . . the gliders that settle silently in the darkness . . . the gliders that land their tough, airborne infantrymen and weapons far behind the lines.

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Waco WACO AIRPLANES

ALL ARMY CARGO-TRANSPORT GLIDERS ARE WACO DESIGNED

Former Nazi Line in Brazil Americanized and Expanded

8,400 Miles of Route Served; Company Plans For More Equipment

THE FORMER German-owned and operated Condor airline in Brazil, now owned by Brazilians and called *Servicos Aereos Cruzeiro do Sul* (Southern Cross), is rapidly being Americanized and modernized through the aid of the Defense Supplies Corp., F. L. Duncan, chief technical adviser to Cruzeiro for the DSC, related on a recent visit to this country.

The airline is operating 8,400 route miles to all parts of Brazil and including a route to Buenos Aires, Argentina. The company is about to let substantial orders for additional engines and radio equipment, and is negotiating with All American Aviation, Inc., for leasing rights to the feeder pick-up device which All American developed and is using extensively in the eastern United States.

Cruzeiro now has four Douglas DC-3 transports which are now operating seven hours a day and within two months will be operating nine hours a day on the main coastal service between Rio de Janeiro and Belem.

Brazilians Eager to Learn

The company also has 10 German JU-52's, tri-motored transports, retained from the German concern, and two four-engined Focke-Wulf 26-passenger FW-200's which operate to Buenos Aires. Eight single-engined Junkers W-34 and F-13's are used on interior routes. Twenty Brazilian pilots now are qualified to fly, including eight who are checked out on the DC-3's. Fifteen are in training.

The Germans never taught the Brazilians anything about airline operation, Duncan said, but the Brazilians are eager to learn and are taking hold as rapidly as possible.

The main maintenance and overhaul base is at Caju, in Rio, while the municipal Santos Dumont Airport, used by Pan American Airways and other lines, is the passenger terminal. Cruzeiro uses one bay in the large government hangar on this airport, but is in need of additional ground facilities.

Passenger fares are running about ten cents a mile on the average, with higher fares being charged in the interior and as low as seven cents on the trunk line. All planes are filled to capacity, he said.

Cruzeiro is doing all of the overhaul work for the VASP airline which operates between Rio and Sao Paulo.

Night operations are to be started shortly between Fortaleza and Belem and within 60 days about 15% of the flight operations on the trunk routes will be at night. Duncan said the goal is to increase this percentage to 30%, and increase plane utilization to 12 hours per day. When new airfields are completed, he said, it will be possible to operate between Rio and Belem at night. The present handicap is lack of beacons and intermediate fields.

The DC-3's are equipped with Pratt & Whitney 1830's and all have Bendix RTA1B radio equipment. The JU-52's are getting very short of parts, especially for engines, and the company is planning to purchase 15 Pratt & Whitney 600 h.p. engines to replace the German engines and continue to use the planes on the interior routes for which they are well adapted. Within a year the line will be able to utilize more DC-3's. Eventually all German equipment will be scrapped.

The 29 old German radio ground stations are being replaced with modern American equipment and the airline is to be equipped for both radio telephone and code throughout. Eight 2500 watt combination telegraph and telephone ground stations have already been ordered from Wilcox Electric Company of Kansas City, Mo., while orders will be placed shortly for fifteen 500 watt stations. All German radio equipment is being discarded.

The ground station program is costing \$250,000, while equipment for the airplanes is costing \$35,000. Delivery is being made now on 15 sets of radio telephone to be installed in the Junkers and Focke-Wulf transports, consisting of a Lear transmitter and a Bendix auxiliary receiver for each plane.

The present company owes the Brazilian Government \$2,500,000, dating from the time the Government stepped in and took over the airline from the Germans, but there is a four-year moratorium on payments which ends within a year or two. The company has ten years to pay but the terms will not be made known until the moratorium expires. Paulo Sampaio, president of Pan American's Brazilian affiliate, Panair do Brasil, is a director and stockholder of Cruzeiro. Cruzeiro's management was installed by the government. The president is Dr. Jose Bento Riberio Dantas.

Agreement Ends in March

The staff of 27 Americans arrived in Brazil last December under an arrangement reached between the Brazilian Government and the Defense Supplies Corp. For 18 months the U. S. technical staff was to aid Cruzeiro in getting going under its own steam, with the U. S. and Brazil each paying the cost for nine months. The agreement expires next March at which time the DSC discontinues any connection with the airline.

Assisting Duncan are men drawn from airlines and other aviation work in this country. Among them are Robert S. Burnett, formerly with Mid-Continent, United and the CAA, who is advising on maintenance; Richard A. Fagan, on leave from American Airlines to take charge of pilot training and operations; Joe Bell, flight superintendent, on leave from TWA; and Charles M. Howell, Jr., an insurance man from Kansas City, Mo., who is Duncan's assistant and is the special representative for the DSC.

It is considered very possible that Cruzeiro, as a 100% Brazilian airline, may want to fly to the United States in re-

Francis L. Duncan Named V. P. of Alaska Airlines



Duncan

Francis L. Duncan, for 16 years associated with air transportation in this country, has been named executive vice president and general manager of Alaska Airlines effective with his return from Brazil where he is chief technical adviser for the Defense Supplies Corp. in

aiding the Brazilian airline, Cruzeiro do Sul. He is expected back in the U. S. about Aug. 15.

A native of Missouri and now 43 years old, Duncan entered commercial aviation in 1928 with Texas Air Transport, Fort Worth, a company which later was joined into the present American Airlines company and system. For 12 years with this airline he served as pilot, flight superintendent, assistant operations manager and superintendent of stations.

In March, 1939, he resigned from American to become vice president of Canadian Colonial Airlines, organizing and setting up the entire operations department.

In 1942 he went to Brazil on a mission for the American Republics Aviation Division of the DSC, designed to eliminate German control and participation in Latin American airlines, substituting American equipment and technical methods. Pending completion of his mission in March, 1945, Duncan has been granted a leave of absence from DSC to undertake the position with Alaska Airlines.

He has 6,000 hours logged as a transport pilot. He expects to make his home and headquarters in Alaska.

Alaska Airlines is a member of the Air Traffic Conference of America and operates a network of routes in Alaska from Juneau to Anchorage, Fairbanks, Nome, and including Whitehorse, Yukon Territory, Canada. It has an office at 501 Fifth Ave., New York, and in Seattle.

CAA Developing Plastic Runway Markers for Snow

CAA's Technical Development Division is now experimenting with plastic extensions to elevate runway marker lights above snow level.

The extensions would be valuable in Alaska, Northern U. S. and Canada where snow falls cover the standard, flush type installation, making landings difficult. A plastic rod would attach to the regular light socket and a series of reflectors and prisms would carry the light beam from the regular set bulb to the top of the rod and reflect in both directions.

reciprocity with a U. S. company, but any such plans are some time in the future in view of the development work yet to be done within Brazil.

Duncan, for many years with American Airlines, has just accepted a position as vice president and general manager of Alaska Airlines, reported elsewhere in this issue.

plane talk



AVIATION EQUIPMENT NEWS AND FACTS

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25 years ago—when Jennies and De Havillands were trench-hopping in World War I—Westinghouse MICARTA was already known as the "aircraft plastic". Today, a vastly improved material, it's on the job again . . . in control pulleys, fair-leads, terminal and fuse blocks, bomb racks, antenna masts, aileron hinge covers . . . in countless other applications where lightweight, great strength, resistance to wear are vitally important.

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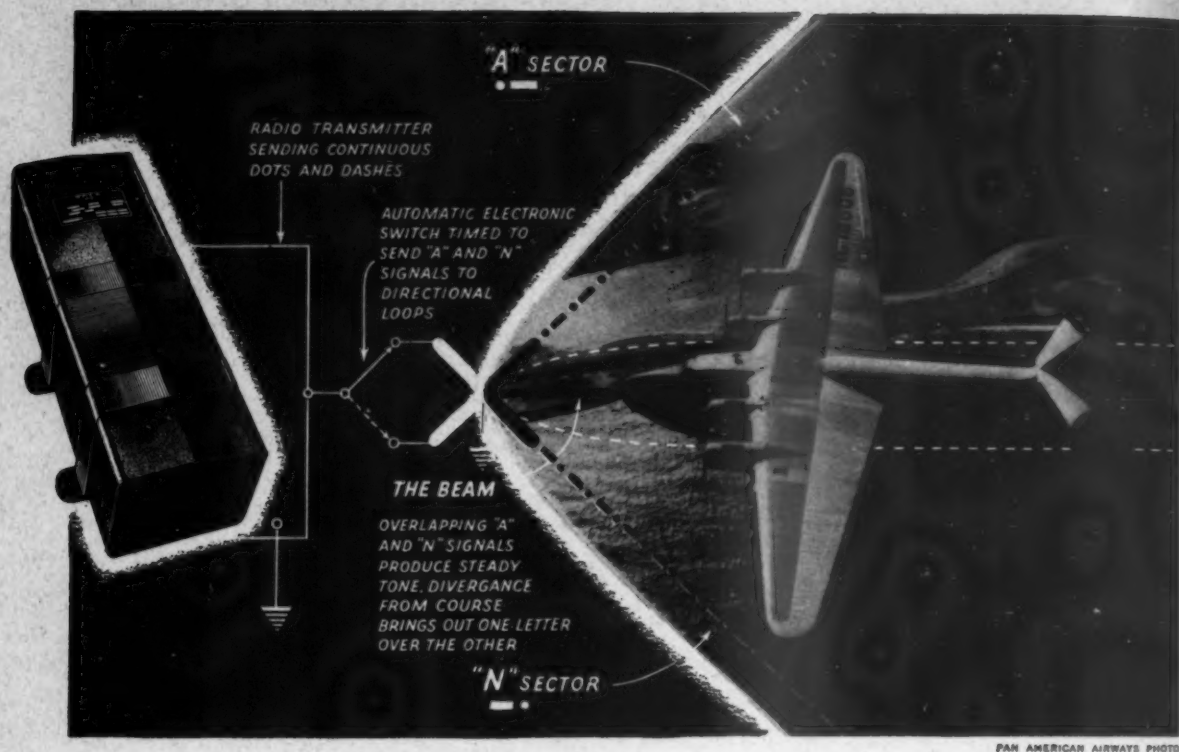
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Thus you will find SOLA Constant Voltage Transformers operating the directional beams of most commercial air lines, and the instrument landing equipment of the C.A.A. Without this constancy of operating voltage, a steady projection of radio beams is impossible.

Radio range stations must necessarily be in constant operation and fully automatic. In most instances

they are located at great distances from the airports. Anything short of instantaneous adjustment of the voltage fluctuations would be unacceptable to these instruments, too sensitive to tolerate variations exceeding $\pm 1\%$.

SOLA Constant Voltage Transformers were selected for this important assignment because of their dependable automatic operation. They have no tubes or net-works to get out of order—they require no manual supervision—they are self-protecting against short circuit—they instantly reduce voltage fluctuations as great as 30% to safe operating limits.

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sign engineer's responsibility does not end with specifying the operating voltage on the label.

It is the designer's responsibility to the user to assure the availability of rated voltage at all times, by building automatic voltage control into the unit—or to instruct the user as to how constant voltage might be obtained for those devices not so equipped.

SOLA Constant Voltage Transformers are available in standard units with capacities ranging from 10VA to 15KVA. As a built-in part of electrically operated instruments or devices, special units can be custom built to exact product design specifications.

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CAB Denies Alaska Airlines Request to Purchase Cordova

Asserting that to approve Alaska Airlines purchase of Cordova Air Service, Inc. would give Airlines an overwhelming competitive position in the development of air transportation in Alaska, the Civil Aeronautics Board has denied applications for approval and extended for 60 days the effective date of a suspension order whereby Airlines may continue to operate Cordova.

The Board order provides that Cordova may request CAB to terminate the suspension order anytime before the expiration of the 60 days if it is found possible for Cordova to resume operations earlier. Airlines was granted temporary permission to operate Cordova sometime after the purchase and sale agreement had been signed.

In its denial of the acquisition, the Board stated:

"Prior to the acquisition of Mirow Air Service, Airlines was already the largest carrier in Alaska from the standpoint of length of routes and revenues. The subsequent acquisitions of Mirow, Pollack, and Lavery have not only increased its route mileage, placing it in an overwhelming competitive position, but also have resulted in superimposing its service on practically all routes of Interior Alaska. Its largest competitor in point of mileage, Wien Alaska Airlines, is authorized to operate over 2,535 route miles. Airlines duplicates 1,070 miles of this pattern, and is authorized specifically to serve 26 of the 35 points named on Wien's routes. Woodley Airways, its next competitor in point of size, is authorized to operate over 1,315 miles, on which routes 25 points are designated. Airlines duplicates all but 110 miles of this pattern, and is authorized to serve 21 of the 25 designated points.

"The district in which Cordova has been maintaining operations is the one remaining area of Interior Alaska which Airlines has not penetrated. This district, usually referred to as the Copper River district, constitutes a well-defined geographic and economic division. The principal sources of economic activity are the salmon-packing industry along the coast and mining activities farther inland. Nearly all of the air service requirements in the district are in connection with moving personnel and supplies for these two industries, and most of this movement is to or from either of the coastal ports Cordova and Valdez. There is some demand for service between Cordova and Anchorage, which has heretofore been met by Cordova Air Service. Except for providing some service on this last mentioned segment in connection with a service between Anchorage and Juneau, which the Board permitted by a special exemption order effective May 5, 1943. Airlines has never rendered service in the Copper River district.

"Under these circumstances, we find that the acquisition of Cordova by Airlines, which already has access to all of Interior Alaska except the Copper River district, would further increase that carrier's overwhelming competitive advantage in the territory to such an extent as to make the acquisition inconsistent with the public interest by precluding the development of a proper competitive balance. This conclusion is not intended to be an indication that we look with disfavor on the building up of strong local systems dedicated to service in the territory, but rather that we find that approval of the acquisition here proposed at this time would assist in the creation of a competitive advantage to one carrier which would stifle such growth.

"In view of this finding, it is our conclusion that the proposed acquisition would not be consistent with the public interest."

A few months ago we made some caustic comments about certain downtown-to-airport limousine rides we suffered through in a midwest city, remarking that the rides were much more hazardous than any airplane trip we had ever taken . . . We didn't name the city at that time, but we'll tell you now that it was Chicago, and that the rides made the Indianapolis Races look like slow stuff . . . Well, we were in Chicago the other day and rode the limousine from the Palmer House to the airport . . . The driver covered the distance at moderate speed and handled the car carefully, making the ride very enjoyable . . . And, according to our watch, he covered the distance in 24 minutes . . . Admittedly this was Sunday noon when traffic wasn't too heavy, but it still proves that you don't have to scare the passengers out of five years' growth to get them to the airport in under one hour . . . Maybe the Chicago drivers have finally forgotten the gangster movies where the limousine always squeals around the corners on two wheels . . . We hope so . . .

When you hear about the airlines getting airplanes back from the Army, re-converting them, etc., you don't realize how much work is involved . . . We certainly had no idea of how extensive the job was until we happened to drop into Northwest Airlines' hangar at Minneapolis and saw one of the recently returned planes getting the "works" . . . It was like the old story of jacking up the license plates and driving a new car between them . . . The wings were off the plane, the motors were out, and part of the fuselage was dismantled . . . When the job is completed, "you can turn the clock back to zero—it's a new airplane," Ken Ferguson, NWA's vice president-operations, told us . . .

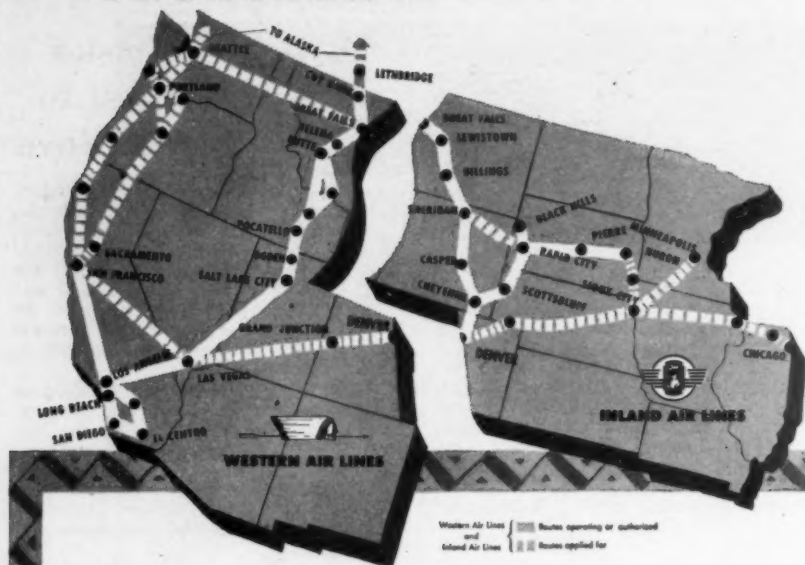
All restrictions are now off on the closing of airline cabin window curtains over airports where there are war plants or other installations . . . Until recently curtains were still closed at certain specified airports, but now the lid is off . . . This is sure going to please a lot of the "back seat pilots" . . . From our comfortable seat in the cabin we generally "assist" the pilot with each landing and take-off, but we've never mentioned this because we thought maybe we were a bit unusual in this respect . . . But now we find that our friends are innumerable . . . The president of one major airline told us that he too makes each landing and take-off, and at least five other airline executives gave us the same story in the past month . . . If the pilot only knew how much assistance he was getting from the cabin his mind would no doubt be completely at ease . . .

You've seen many instances of women rushing to greet their soldier husbands returning from overseas, but here's a story with a different twist . . . Betty Perier, Western Air Lines' reservationist in Los Angeles, had an urgent call from a man who was desperate to get on one of the company's flights to San Francisco . . . Space was finally cleared for the fellow, who then sighed with relief and explained: "You see, my wife just got into San Francisco after 18 months overseas and I can hardly wait to see her" . . .

We were riding one of the airlines recently and the plane went through a summer shower which resulted in us getting tossed around a bit for 15 minutes or so—nothing unusual, just a bit of rough air . . . When we came out of it, the passenger across the aisle said to his companion: "Well, the pilot handled that very nicely. But then they're used to flying the mail planes, and the mail always gets through, you know" . . . Maybe these mail planes are something we haven't heard about . . . And we're sure that Roy Martin, superintendent of air mail for the Post Office Dept., would like to know that the mail always gets through . . . He's been tearing his hair out for the past two years, trying to keep the mail from being off-loaded for priority passengers . . .

Lieut. Col. Jack Neale, well-known airline pilot—he was with Pennsylvania-Central for 13 years before being called to active duty in 1942—was in the thick of things during the invasion . . . He piloted a C-47, towing a glider which was to be dropped behind German lines . . . He got the C-47 back to England pretty well battered up . . . Not exactly a milk run, was it, Colonel? . . .

Eric Bramley



Design for air transportation in the West

Western Air Lines' design for weaving the entire West together with routes that will provide the finest possible air transportation, was a step nearer completion as a result of the purchase of Inland Air Lines.

Inland's 1300 miles of routes, employees, facilities and equipment give Western new opportunity to bring broader service to the traveler and shipper of the West, at a time when the need is growing by leaps and bounds. For in the West today, air lines are "life" lines to many mushrooming regions...many new markets. And, Western Air, born in the West and owned in the West, has particular knowledge and appreciation of the problems of the West.

Addition of Inland properties is only one step toward Western Air's plan to eventually tie many communities together with "air" lines, bring them the benefits of modern transportation...bring them closer to the air world of tomorrow.

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WESTERN AIR LINES

America's Pioneer Airline

Recent CAB Orders Affecting Air Carriers

2928, Doc. 9-401-B-2: Authorized inauguration of service between St. Louis and Washington.

2946, Doc. 864 et al: Consolidated for hearing applications of Alaska Airlines, Inc., Woodley Airways and post office department relative to additional service in Alaska.

2952: Partially rescinded order as it relates to temporary suspension of service between Houston, Tex. and Corpus Christi, Tex. on Braniff's Route 50.

2954, Doc. 1368: Severed from Ryan School of Aeronautics Docket No. 1368 portion relating to proposed service between Los Angeles, San Francisco and Honolulu and assigned Docket 1475 to severed portion. Consolidated for hearing applications in Dockets 851, 1065, 1110, 1383, 1385, 1475 and 1372, for hearing; permitted Pan American Airways, Inc., Inter-Island Steam Navigation Co. and Department of Justice to intervene.

2955, Doc. 930: Denied application of Alaska Airlines for approval of its purchase of Cordova Air Service.

2956, Doc. 868: Continued period of exemption in Order 2257 permitting Alaska Airlines to operate Cordova routes for additional 60 days or until Cordova is able to resume operations.

2958: Approved agreement between Panagra and Lloyd Aereo Boliviano relating to transportation of domestic Bolivian air mail.

2959, Doc. 1083: Permitted reopening of record to receive additional evidence, by affidavit, relating to purchase price of Mayflower Airlines.

2960, Doc. 718: Dismissed application at request of TWA.

2963, Doc. 1435: Granted temporary exemption to Ketchikan Air Service so as to authorize carrier to render non-scheduled services (persons and property) between Ketchikan and all points within the First Judicial district of Alaska within a 150 mile radius of Ketchikan. Temporary exemption to be in effect until Board renders decision on application but in no event beyond Oct. 1, 1944.

2962, Docs. 413 et al and 503 et al: Denied motion of Braniff Airways for severance and consolidation. Denied Braniff's motion to consolidate applications 1102, 1143 and 413 for further hearing.

New Air Services

Chicago and Southern Air Lines expects to restore its third round trip from Memphis to New Orleans via Jackson today (July 15). This restores the line's service to pre-war levels, according to R. L. Heininger, general traffic manager. Two 21-passenger Douglas planes recently were returned to the airline.

Trans-Canada Air Lines has provided service to Fredericton and Saint John, New Brunswick, via Blissville airport. A new over-night service between Toronto and Halifax, and a new late afternoon flight from Toronto to Windsor also is announced.

Delta Air Lines will add four flights to its present schedules tomorrow (July 16). Two flights, one in each direction, will be added between Atlanta and Fort Worth. A second round-trip daily will be flown between Atlanta and Charleston, S. C.



*"Would you like
to swing on a star..
You can be better off
than you are...
You can grow up to be"
a NAVIGATOR!*

[A variation on the song, "SWINGING ON A STAR." By permission of Burke and VanHeusen, Inc. 1619 Broadway, New York, copyright owners.]



• Today America's bombers are shuttling back and forth over the invasion fronts, and deep into Germany and Japan . . . cargo planes of the Air Transport Command are flying everywhere . . . ships of the Navy, Coast Guard and the Merchant Marine by the thousands are sailing all of the seven seas.

• The navigators of these vast fleets of planes and ships, the men who have the responsibility of keeping on a true course, "swing on a star". For the light of certain stars are accurate

guide-posts, through the air and on the surface of the sea.

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Student Pilot's Training Primer (Col. Hugh J. Knerr)	2.00
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AA-AMEX Deal May be Aired In North Atlantic Hearing

AERICAN AIR LINES' efforts to obtain approval from the Civil Aeronautics Board of its acquisition of American Export Airlines may become involved in the hearing on proposed North Atlantic international air routes.

This possibility arises from the fact that United Air Lines, Inc. has filed a petition with CAB asking that the Board postpone all procedures relating to the acquisition case and consolidate these applications with the international route proceeding which has been tentatively set for Oct. 16.

When the prehearing conference was held several weeks ago on American's application for approval of its purchase of American Export Airlines, counsel for United contended that the question of approval was linked with international air policy. United recommended that all procedures be delayed until policy with reference to international air transportation expansion had been determined.

In the formal petition filed ahead of the prehearing conference United stated: "In the event of multiple American air carriers conducting trans-Atlantic air transportation in competition with foreign carriers, control of American Export by American, a transcontinental carrier, would give it an advantage over United and TWA in the solicitation of traffic to be flown across the Atlantic by American Export Airlines to and from competitive points within the U. S. served by transcontinental carriers."

Counsel for both American Airlines and American Export opposed granting of United's petition. Leslie Craven, counsel for AMEX, pointed out that his company was under a CAB order to divest itself of control by American Export Lines, Inc.—the steamship company. Sale to American Airlines in the manner by which Export hoped to carry out the Board's order, it was stated.

Sometime later, based on the recommendations of its examiner, Thomas L.

Wrenn, the Board decided to go ahead with the acquisition proceeding and set July 24 as the date of hearing.

United, in its petition filed early this month, asked the Board to consolidate the divestment-acquisition hearing with the hearing on North Atlantic route proceedings so that all of the issues could be heard at one time. It contends that if the Board approved the acquisition case, American Airlines, a domestic carrier, would come into possession of Export's temporary certificates under which Export is now operating in the international air transport field.

Idaho PUC Denied Rein On Control of Airways

Certificates of public convenience and necessity cannot be issued by the Idaho Public Utilities Commission because the Commission is not vested with authority over airways, according to a ruling of the State's Attorney General.

In his opinion, the Attorney General proposed that applicants proceed "in accordance with the Aeronautics Act."

This would mean a proceeding before the Federal, rather than the State Government.

WAL Opens 3 New Offices: Edmonton, Calgary, Denver

Three new offices have been opened by Western Air Lines. Jointly with Trans-Canada Air Lines, Western has established offices both in Edmonton at the MacDonald Hotel and in Calgary. A new office also has been opened at the Brown Palace Hotel in Denver.



Nichols

Western, which operates a California to Canada network has its northern terminus at Lethbridge, Alberta, Can., where connections are made

with Trans-Canada.

Lawrence Nichols of Edmonton has been appointed traffic representative for the Canada western region by Western. Formerly assistant station manager with Western's military division, Nichols joined the airline in 1942.

Western declared, in announcing Nichols' appointment, that the opening of traffic offices in Edmonton was done in an effort to expedite the flow of air traffic between Alaska and Canada.

Colorado's 2nd Intrastate Airline Ready for Service

Colorado's second intrastate airline, Mountain States Aviation, Inc., is expected to begin passenger, express, and cargo air service from Denver to seven Colorado mountain cities shortly. Cities to be served include Leadville, Grand Junction, Glenwood Springs, Delta, Montrose, Gunnison, and Salida.

Mountain States is a Denver firm with more than six years' experience in aviation over mountainous terrain. For the last three years, the company has been conducting a Civilian Pilot Training Program for the Army and Navy at three fields—two in Denver and one in Boulder.

Mountain States also has applications on file with the Colorado Public Utilities Commission and with the Civil Aeronautics Board to serve at least 14 other Colorado towns and cities on scheduled feeder routes, which it hopes to put into operation as soon as equipment is available. These communities include Grand Lake, Walden, Craig, Meeker, Cortes, Durango, Alamosa, Canon City, Fort Morgan, Akron, Yuma, Wray, Burlington, and Limon.

Another Colorado intrastate airline opened service late last month when Scenic Air Line instituted scheduled flights connecting Fort Collins, Boulder, Greeley, Fort Morgan, Sterling and Denver.

The airline, operated by Massey & Ransom Flying Service, Inc. of Fort Collins, is said to be using two-five-place single-engine Wacos, and is flying two round trips daily between Denver and Fort Collins and one between Denver and Fort Morgan-Sterling.

CAB Calendar

July 24—Hearing on application of American Airlines for Board approval of its acquisition of control of American Export Airlines.

Aug. 1—Prehearing conference, international routes in North Atlantic area. Tentative hearing date Oct. 16.

Aug. 2—Prehearing conference, international routes in South Atlantic area. Tentative hearing date Nov. 1.

Aug. 9—Oral argument before the Board in Docket 413 et al involving service to Tulsa and Docket 503 et al, involving service to Memphis-Oklahoma City-El Paso.

Sept. 1—Prehearing conference, international routes, North Pacific area, via Alaska. Tentative hearing date Dec. 13.

Sept. 4—Hearing on Hawaiian cases (overseas) Docket 831 et al.

Sept. 5—Hearing on application of Braniff Airways and T. E. Braniff for Board approval of acquisition of Aerovias Braniff, S. A. (Dockets 1360 and 1373) (Tentative)

Sept. 5—Hearing on applications involving service in Rocky Mountain area, Ray Wilson, Inc. (Docket 152 et al) (Tentative)

Sept. 15—Prehearing conference, Central Pacific, via Hawaii. Tentative hearing date Jan. 10.

Sept. 18—Hearing on applications involving new and amended routes in the Latin America Caribbean area, (Docket 525, et al)

Oct. 2—Prehearing conference, international routes, Australia area. Tentative hearing date Feb. 1.

Oct. 16—Hearing on Pacific Coast applications, Oregon Airways, Inc. (Docket 250 et al) (Tentative)

Joplin and Memphis- Oklahoma-El Paso Cases Consolidated

Following recommendations by its examiners, Lawrence J. Kisters and Berdon M. Bell that the temporary certificate of American Airlines, Inc. for service to Joplin, Mo. should be made permanent, the Civil Aeronautics Board has consolidated for oral argument this case and the one involving Memphis-Oklahoma City-El Paso service. The oral argument is set for Aug. 9.

While the two cases were heard separately, some applicants in one case appeared as interveners in the other, or vice versa. Because the question of diversion as between the proposed services in both cases is one of the more important issues, the Board acceded to requests that both cases be set for oral argument at the same time.



Loading of the shears was accomplished under the supervision of Army Air Force officers.

Photos courtesy of Lockheed Aircraft Corporation

FAST DELIVERY ARRANGED FOR WHITING MODEL 8 SHEAR



Two 2000-pound shears—a 2-ton load—prove that the shipping of heavy cargo by air is a reality.

When the Lockheed Aircraft Corporation needed rotary shears in a hurry in order to carry on a vital phase of its accelerated P-38 program, the Army Air Force cooperated. Army cargo planes were made ready and two Quickwork Model 8 Rotary Shears crated for shipping.

Said Mr. A. E. Salisbury, Lockheed Field Service Representative, "It is thought by this office that an exceptional job was accomplished . . . in hastening the delivery of your shears."

Flown to California overnight, the shears were in operation in the Lockheed plant within twenty-four hours of the time they were given their final coat of paint in a Whiting shop.

One of the Quickwork Model 8 Shears crated for shipping.



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Cocke

Conroy

Executive

V. P. Conroy, TWA vice president in charge of traffic, has resigned to take a position with another company. E. O. Cocke, general traffic manager, is assuming Conroy's duties until a permanent appointment is made. Conroy will announce his new connection soon.

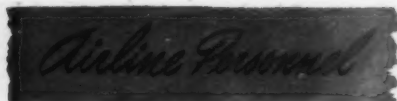
Clarence M. Belinn has resigned as vice president of Hawaiian Airlines to devote full time to Los Angeles Airways, of which he is president. LAA has filed applications with the Civil Aeronautics Board for extensive feeder routes radiating from Los Angeles to points in Southern and Central California.

Maj. W. F. Long, head of Dallas Aviation School, which he founded in 1926, has been elected chairman of the board of Essair, Inc. He has been active in aviation since 1916.

Traffic

Sterling W. Nelson, formerly manager of counter service in United Airline's Chicago traffic office, has been appointed DTM in Hartford, Conn.

C. W. Garratt, recently appointed DTM in Chattanooga, Tenn., for Pennsylvania-Central Airlines, is the first PCA employee to return from military service to his old job. He was a pilot in the AAF before receiving a medical discharge. John P. Loughnane has been named assistant city traffic manager for PCA at Milwaukee, succeeding Ellis Saxton, resigned.



Fisher

Jones



Garratt

Nelson

Mary Ann Fisher has been appointed counsellor-supervisor in Western Air Lines' new offices in the Brown Palace Hotel, Denver. WAL also announces:

Virginia Jones has been added to the San Diego traffic office staff; Robert K. Vernon has been named office manager of the Los Angeles district traffic offices; George L. Parr and Keith W. Jones have been added to the Los Angeles traffic staff.

Operations

Col. J. R. Cunningham, director of communications for United Air Lines, has returned to his duties after more than two years with the AAF.



Loughnane

La Porte

Capt. Arthur E. La Porte, chief flight officer of Pan American Airways' transatlantic operations; Cleason E. Shealer, shop superintendent at PAA's Atlantic Division headquarters; and Edward W. McVitty, assistant division manager of the Atlantic Division, have received 15-year service awards.

Capt. Rodolfo Torres Rico, pilot on PAA's Compania Mexicana de Aviacion, has been awarded Mexico's Gold Star Medal for having flown 15,000 hours. This was the first such decoration in the history of the Mexican Republic.

Miscellaneous

Harrel Gladish has been appointed supervisor of payroll accounting for United Air Lines at Chicago.

R. Todd Crutchfield, former OPA district rationing chief in Memphis, has been appointed personnel director of Chicago and Southern Air Lines, succeeding J. J. Acree, who has become associated with the Smaller War Plants Corp. in Birmingham.

Betty Almand, former associate editor of Delta Air Lines' magazine, "Delta Digest", is training with a Red Cross overseas recreational unit.

Don SeEVERS, assistant to the president of All American Aviation has been named Washington representative of the Feeder Airlines' Association.

All American Amends Proposal to Include Passenger Transport

All American Aviation, Inc., pioneer airmail pickup operator, recently filed an amendment to new route applications on file with the Civil Aeronautics Board in which it proposes for the first time to include passenger transportation on some of its routes.

The company operates its airmail pickup service over nearly 1,600 miles of routes from a Pittsburgh hub, largely through the mountainous regions of Pennsylvania, West Virginia, Virginia and Ohio. It has been operating under a temporary certificate given by the Civil Aeronautics Board five years ago.

In the report of CAB Examiners William J. Madden and Albert F. Beitel on

the Local-Feeder-Pickup investigation, they recommended, among other things, that passengers be carried in connection with the granting of new certificates involving airmail pickup operations. This recommendation undoubtedly has influenced All American officials in their decision to amend existing applications and request the carrying of passengers as well as airmail and express.

The application filed recently would amend five routes which have been applied for in the New York-Massachusetts area. The company proposes to carry passengers on two routes between New York City and Syracuse, between Albany and Syracuse, Pittsburgh and Syracuse and Boston and Albany.

All American proposes to use twin-engine planes in passenger-pickup operations and will add night operations when the demand and equipment permit such service.

Air Express Shipments Gain 14.3 Per Cent In First Five Months

Air express service in the first five months of this year has marked up an increase of 14.3 per cent over the similar 1943 period, the Air Express Division of Railway Agency reports. A total of 180,464 shipments were carried in the combined service for the nation's commercial airlines, compared with 157,885 shipments, January to May, 1943.

Revenue on this traffic, which originates at or is destined to non-airport cities, and therefore is handled part way by rail, increased 9.4 per cent for the five-month period.

In May combination rail-air shipments totaled 36,598, compared with 32,680 shipments for May, 1943, a gain of 12 per cent.



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CURTISS-WRIGHT TECHNICAL INSTITUTE BEFORE THE WAR DURING THE WAR AFTER THE WAR

Garni Issues Offered In Prehearing Report

Issues in the forthcoming hearing on whether the Civil Aeronautics Board should continue its approval of an interlocking relationship involving the service of A. Garni as a director of Eastern Air Lines and Panagra are set forth in a prehearing conference report filed by Francis W. Brown, assistant chief examiner, and Examiner William F. Cusick.

These issues were outlined as follows: "Does the fact that Eastern on the one hand and Grace Line, Inc., and Panagra on the other are presently interested in conducting air transportation in the same general region of Latin America constitute a conflict of interest which will justify disapproval of the interlocking relationships between Eastern, Panagra, Grace Line, Inc. and W. R. Grace & Co.? Does the Board have jurisdiction over the interlocking relationship between W. R. Grace and Co. and Eastern? Does the ownership of stock by W. R. Grace and Co. in Panagra constitute engaging in a phase of aeronautics as that phrase is used in the Act? Does the fact that Grace Line, Inc., has filed an application for authority to engage in air transportation make its parent W. R. Grace and Co. subject to the Board's jurisdiction?"

Gerhard A. Gesell, counsel for Garni and Panagra, pointed out in the prehearing conference that W. R. Grace & Co. is a \$70,000,000 company and holds only one-half million dollar interest in Panagra. He contended that such an interest was infinitesimal. He took the position that W. R. Grace & Co. is not engaged in a phase of aeronautics simply by holding stock and even if the holding of stock in an air carrier does constitute engaging in a phase of aeronautics, then the stock interest must be substantial.

CAB Should Act Against Colorado, Says Knight

The Civil Aeronautics Board has retarded "the orderly development of a system of feeder airlines," Henry Knight, Washington lawyer, declared recently in condemning the Board for its failure to take action against Colorado and other states for issuing certificates for air carrier operations.

He pointed out that in 1941 by issuance of a regulation, CAB assumed jurisdiction over all navigable air space in the United States, since all of the air space was susceptible of use in interstate air commerce.

Curtis Opens Own Office

Arthur Curtis, for many years Pan American Airways' public relations manager for Miami, has opened his own offices in the Dupont Building, Miami, and will continue to handle certain matters for Pan American as well as for clients with business and interests in Latin America.

P. U. C. Action Limited

The Pennsylvania Public Utility Commission has announced that it will take no action on applications for public air services, unless it can be demonstrated by applicants that equipment and facilities are either presently on hand or are currently available for purchase.

Henry Unfriendly?

*Oh No! But He DID Use That
Nasty Word 'Altercation'
Before Mr. Branch Did*

The transcript of the oral argument in the Pan American rate case wherein a \$6,034,746 error in computations of the Civil Aeronautics Board was first brought to public notice, reveals that it was Henry J. Friendly, counsel for Pan American, not Board Member Harlee Branch who first used the word "altercation" in the spirited colloquy which developed between them.

Branch had contended that the Board's six million dollar error had redounded to the almost immeasurable benefit of Pan American while Friendly had said that the effect of the Board's error had been very bad for the carrier. The error was called to the attention of CAB by Pan American after which the Board reopened the rate case.

Friendly had asked the Board to do for Pan American what it had intended to do Aug. 28, 1942—place the carrier on a self-sustaining basis as far as mail pay was concerned. The following colloquy ensued:

FRIENDLY: "If you don't think it's fair, let's have another one of these rate cases by which we seem to be afflicted to a greater extent than anyone else I know of but I don't like—"

BRANCH: "You don't blame the Board for that do you?"

FRIENDLY: "To some extent, yes."

BRANCH: "Will you please tell me in what respect the Board is to blame for having these rate cases?"

FRIENDLY: "I don't care to go into all that detail but it seems to me—"

BRANCH: "I would like very much to know because I have often wondered why we could not bring these Pan American cases to a conclusion."

FRIENDLY: "I don't like to get into an altercation with you. I can give you the dates when some of these cases are argued before the Board. Certainly the delay after that is not our fault."

BRANCH: "I don't want to get into an altercation with you sir. I have the highest regard for you."

FRIENDLY: "I would like to reciprocate that."

BRANCH: "As a gentleman and a lawyer, but I would like to get at the bottom of these things when they present these questions to my mind."

FRIENDLY: "I think I hardly need assure you that—"

BRANCH: "I ask the indulgence of your patience when I press you for answers to questions that occur to my mind."

FRIENDLY: "I hope you continue that for even more years than I have known you in the past Mr. Branch and that goes back for a good many."

BRANCH: "Thank you Sir."

In printing a portion of this rapid-fire colloquy in a recent issue of this magazine, it appeared as though Branch had first used the word "altercation." In response to a request from Branch, the official transcript is printed.

Braniff Wins First Round In Fight Against Essair

The first round in a court fight to deprive Essair, Inc., of Austin, Tex. of its temporary certificate to operate an air transport route between Houston and Amarillo, Tex. has been won by Braniff Airways, Inc.

Three months ago Braniff Airways filed an action in the Court of Appeals, District of Columbia, asking that the Civil Aeronautics Board be compelled to set aside and vacate an order whereby Essair received an operating certificate which is to remain in force until Dec. 31, 1946. Philip S. Peyser, counsel for Braniff, assigned 12 points of error in his attack on the Board's decision. The principal contention of Braniff hinged about an alleged lack of adequate showing on the part of Essair that it was "fit, willing and able" to perform the air transport service.

When the court requested CAB for the record, a transcript of the oral argument of September, 1943 was not included in the material forwarded. Braniff then filed a motion to compel the Board to furnish a transcript of this argument on the grounds that it was germane to the issue that there had not been an adequate recent showing that the "applicant was fit, willing and able." Counsel for Braniff and some of the interveners had argued that evidence taken at a hearing in November of 1940 was out-of-date as far as financial standing and type of equipment was concerned.

In its order of two weeks ago, the Court ordered, over objections of counsel for CAB, that the transcript be included in the record which will be reviewed by the court.

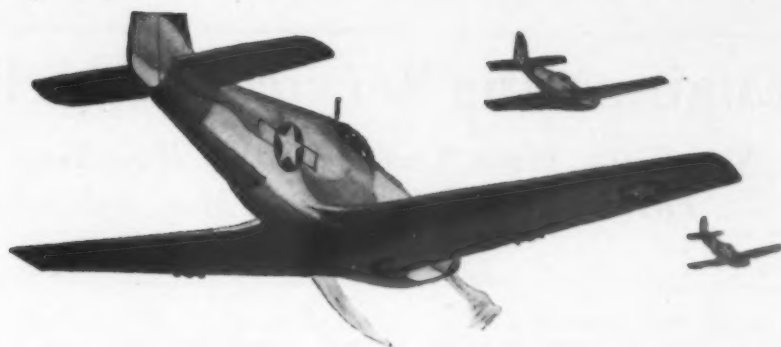
Hawaiian Airlines Files For Two Pacific Routes

Hawaiian Airlines, Ltd. has filed with the Civil Aeronautics Board, an application for two regular passenger, freight and mail routes between Honolulu and Shanghai, via Midway and Tokyo, and between Honolulu and Manila, via (a) Wake and Saipan in the Marianas and (b) Johnston, the Marshall Islands, Ponape, Truk and Palau, all of the foregoing intermediate points being islands in the central and western Pacific.

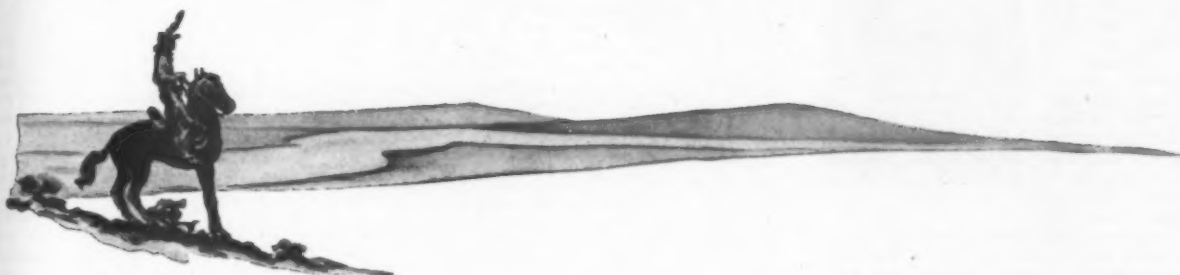
Hawaiian Airlines now has pending before CAB an application for a route between Honolulu and San Francisco and Los Angeles. This application is to come up for hearing before the Board early in September and is a part of the company's future expansion plans.

CAA Promotes Kinney

James L. Kinney, formerly superintendent of safety regulation of the Fourth Region, CAA, Fort Worth, has been appointed chief of the Air Carrier Division, Washington. Kinney made aviation history in 1932 when he flew an airplane blind from College Park, Md., to Newark under actual zero-zero conditions throughout takeoff, flight, and landing. The feat was regarded as an important pioneering venture in the development of instrument landing.



Silver Horseshoes for the Mustang



Mallory Bearings have brought more than "horseshoe" luck to the Mustang fighter. These silver bearings, made by the Mallosil* Process, have produced a dependability of engine performance that plays no small part in Mustang achievements.

Flying faster and higher than any fighter plane heretofore . . . utilizing superchargers to carry it to over 30,000 feet . . . the Mustang achieves its tremendous speed and lift by using bearings capable of withstanding tremendous pressures and



stresses. Ordinary bearings could not take such punishment. But Mallory bearings can and do!

Mallory has pioneered in developing these new silver-bonding methods so that users of aircraft and other heavy duty bearings now look to Mallory as a reliable source for precision production. Mallory facilities, expanded many times over to meet military needs, are recognized as the most advanced in the new techniques responsible for higher and higher levels of aircraft engine performance.

It is not difficult to foresee how much significance Mallory Bearings will have for post-war commercial aviation. But this is only one phase of the development. Wherever heavy duty, precision bearings are essential for improved engine performance, Mallory Bearings will have much to offer to design engineers planning for the future.

P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA

*Reg. U. S. Pat. Off.



Do Something Extra—
Buy an Extra War Bond

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SERVES THE AVIATION, THE AVIATION-INSTRUMENT AND
THE AVIATION-COMMUNICATION FIELD WITH WELDING
TIPS, THE MALLOSIL* PROCESS-BEARINGS, SPECIAL ALLOYS,
ELECTRICAL CONTACTS, VIBRATORS, VIBRAPACKS,* CONDENSERS, ROTARY AND PUSH BUTTON
SWITCHES, ELECTRONIC EQUIPMENT, COMMUNICATIONS HARDWARE, RECTOSTARTERS*

Engineering Service for Airlines Founded

New York Firm Contemplates Handling Technical Details For Several Companies; May Attract Regional Lines

By E. J. FOLEY

AT LEAST ONE COMPANY is considering "airline engineering" as a field for future activity. It is considering the possibility of offering to the air carriers complete "maintenance engineering" as well as development service, thus permitting the operator to proceed with only such a technical nucleus as may be required to preserve engineering individuality and identity.

Without intending to disparage the aspirations of anyone, it appears that airline operation by remote control will be the order of the postwar day if the present dreams of dozens are realized. Air transport's back door, the subcontracting of services, is becoming almost as popular as the new front door, the so-called "feeder line" operation.

John Callahan of Affiliated Engineering Co. of New York City is the idea man in this case. We want to make it clear that we are entirely neutral on this subject. It is not for us to suggest, let alone recommend; rather, we shall only describe the idea.

Callahan, an engineer with airline experience, believes that his engineers can make distinct contributions to airline engineering and relieve operators of certain present complications. His concern is now active in prime and sub-contracting engineering work in connection with current military aircraft designs of several manufacturers.

Consolidates Work

Such a service proposal apparently contemplates the consolidation of the technical work of at least several airlines and the handling of the whole job by this single independent agency. Any other basis, such as the "letting out" of each airline's engineering work to a separate subcontractor, would be an unjustifiable extravagance when contrasted with an integral, fully controllable engineering department within the airline.

Such a service function would not supplant the entire engineering department of the airline. No operator of significant size and scope of activity would admit to the substitution of such a service for the full technical function of his organization. The competitive factor although generally non-existent in technical affairs per se, is influenced by engineering policies and practices to such an extent as requires the retention of a nucleus of key technicians, irrespective of who is to handle the routine procedures. In general, the responsibility of this nucleus would con-

tinue to be: the direction of the engineering staff (subcontractor) along such a course as will guarantee company individuality and reflect company ingenuity in the technical fields.

Obviously, the problems of development engineering would require the active airline direction more than the matters of maintenance engineering.

Such an engineering service may have a particular appeal for the regional air carriers. Their operations, though vital and profitable, may not be individually equipped to sustain the overhead load of a formal engineering staff. Yet, the availability of engineering service to them might result in improvements of service, economy and overall operation. Accordingly, a pooling of their aspirations in this direction and an acceptable joint contract by several of them to enter into subcontracting of their technical work, might result in otherwise unobtainable advantages.

Applicable Know-How

One of the potential benefits of such a service is the objective point of view which could be represented by the agency. The applicable know-how and experience in other fields of engineering which could be brought to bear upon airline problems would be another possible profit.

On the disadvantageous side of the ledger may be the items of cost, control of effort and continuity of "office." It is axiomatic that caution should be the keyword in going outside one's organization to procure a service which can be provided capably from within. The failure of the engineering "subcontractor" or the dissolution of the agreement for any one of a dozen reasons might result in a disconcerting disruption of an important phase of operation.

The justification for such a service in the air transport industry can only be proved by time. However, in our own opinion, there is one phase of airline technical effort which is perfectly amenable to subcontracting treatment as Callahan proposes. We again introduce the Air Transport Laboratory, a "natural" for joint effort and a function which will best be provided through private venture.

We proposed the establishment of such a facility in the Fall of '41 in recognition of the need for conservation of the salesman's shoe leather and samples. Having watched the sales engineers for spark plugs or sanders or altimeters or aluminum alloys go from airline to airline on a single airport repeating their stories and leaving their samples, we were annoyed, to say the least.

The necessary extravagance of time and material on the part of the sellers and the triplication or quadruplication of "testing effort" by the buyers—the airlines, seemed illogical then and still does.

The fact that many of the tests were

made within shouting distance of one another, were equally detailed in scope but often widely divergent in results did little to strengthen the case for such activity.

Our suggested solution is a single testing laboratory, acceptable to all air carriers, to which all appropriate activity within the industry would be routed and from which prompt conclusive results in the form of acceptance or non-acceptance would stem. Too frequently, testing labs take on the appearance of "sample museums" and the major activity becomes the daily ritual of dusting the last two year's receipts of samples and then admiring the immaculate results. Accordingly in our concept, "customer"-established schedules would be a definite factor.

Incidentally, we deny ever having claimed the lab idea as originating with us. There is entirely too much ingenuity rampant in the airline industry for anyone to make such a claim without much research. Personally, we do believe that the idea got its public start about three years ago in these columns but we're more interested in proving its practical value than its paternity. The same cannot be said for some who have written us on this subject contributing nothing more than the "historic date" of their conceiving the project.

Recent months have seen a new flurry of activity and interest regarding the laboratory proposal. We understand that Dr. Jerome Hunsaker of the NACA has commented on the desirability and value of such a program and that he has been actively supported by Maj. Lester Gardner of the Institute of the Aeronautical Sciences. This is all to the good and no less significant is the support of such airline executives as W. A. Patterson of UAL and Bill Littlewood of American.

No Effective Medium

The hitch seems to be the establishment of an effective medium through which the program can be carried out. We are sure that the NACA is not interested in adopting the function; as a matter of fact, it is more likely that the Committee is interested in farming out some of its work to such a body. The Institute might be a more appropriate candidate but probably, it would not wish to become directly involved. The need for an airport site and all the other essentials to flight test work might also be discouraging to the Institute.

In passing, we cannot help but say that irrespective of who runs it, there is one contribution of immeasurable value which the Institute could make: the loan of Major Gardner to raise the initial funds!

A most logical agency to carry out such a program would be such a private enterprise as Affiliated Engineering, assuming

(Turn to page 69)

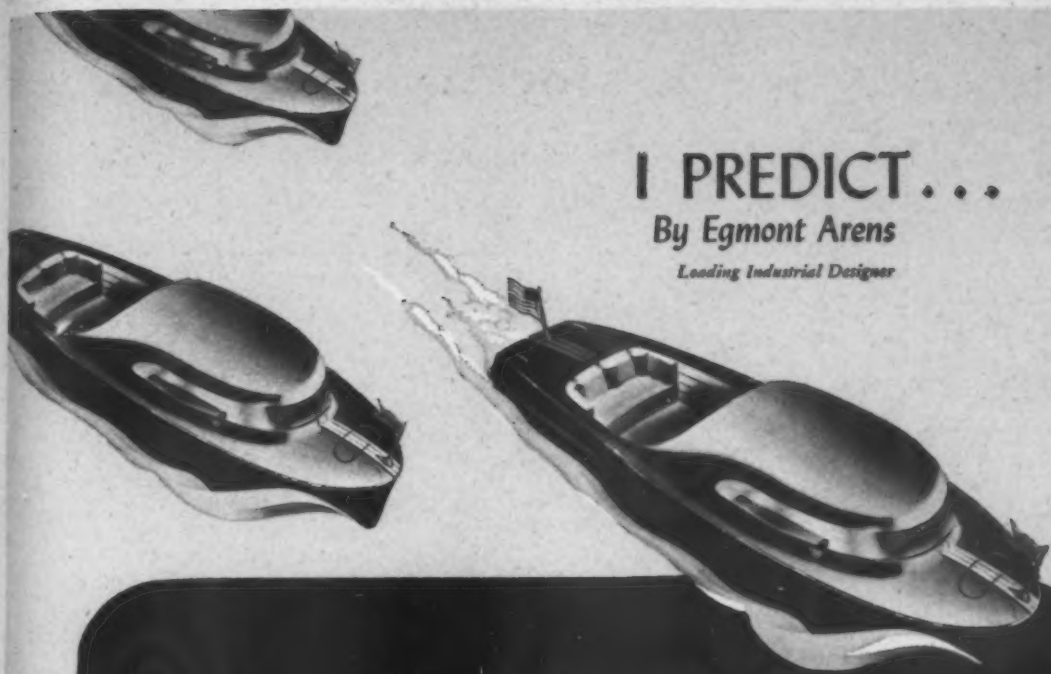


Foley

I PREDICT...

By Egmont Arens

Leading Industrial Designer



I predict quantity production, right after the war, of unsinkable boats with continuous skins, tougher and lighter than wood, hull and top sides molded in one piece of Co-Ro-Lite, a new molding material consisting of plastic bonded rope fibres. Scale models of such boats are now being tested under a variety of conditions, and hulls of similar construction up to 32' have already been successfully molded. Light weight, speed and low cost will be overall outstanding features. The skin-stressed monocoque construction produces a light weight hull and top. An aluminum aircraft-type engine, housed out of the way in a small space under the aft deck, will provide speed and low operating expenses. Production by molding assures low initial cost, and a one-piece hull, eliminating yearly overhaul and caulking, means low upkeep. Thus motor-boating will be a pleasure everyone can buy with their War Bonds when Peace is restored.

Note: The Weatherhead Company, one of the oldest and most important manufacturers of parts for the aviation, marine, automotive and other key industries, looks forward to the day when its four plants will be contributing to peacetime needs.

Look Ahead with



Weatherhead

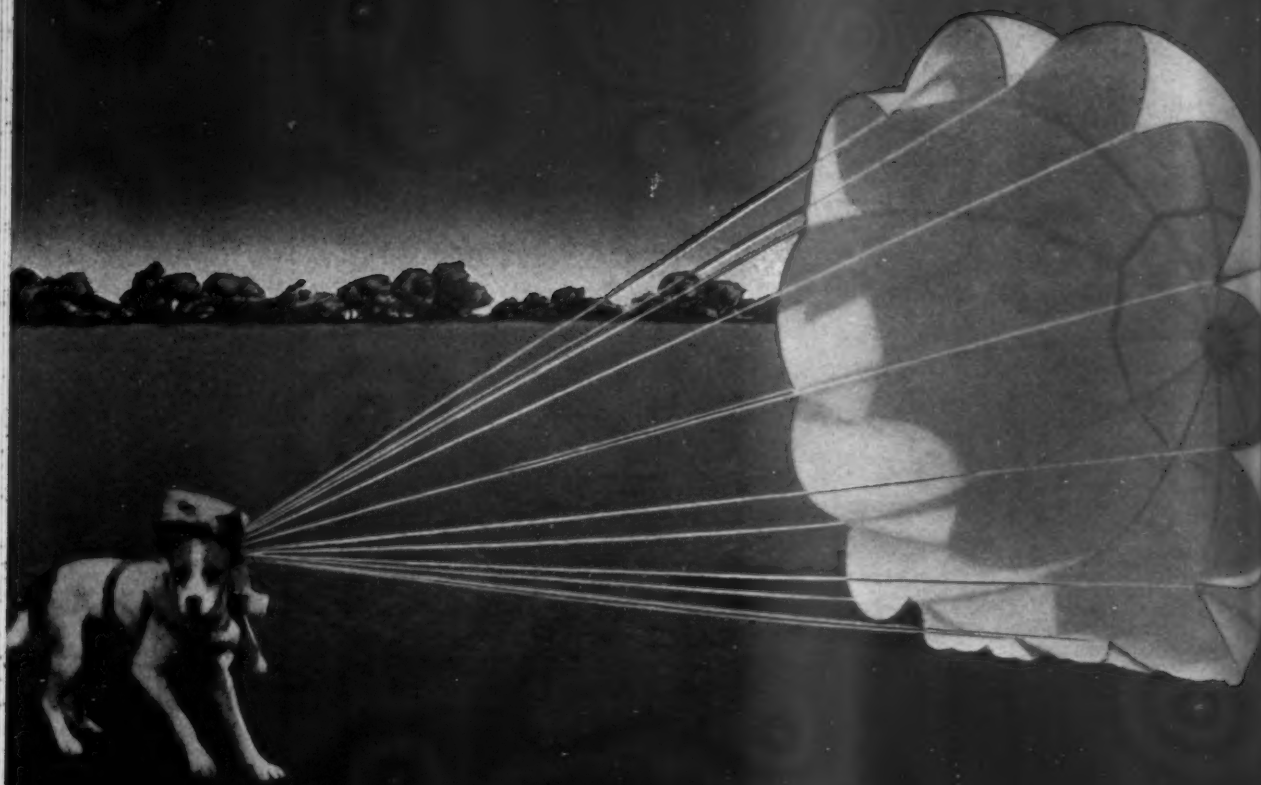
THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

PRER: Write on company letterhead for "Sands Of Industry"—a history of The Weatherhead Company, its many facilities and diversified products.





Man's Best Friend

OFFICIAL SIGNAL CORPS PHOTOGRAPH

The dog illustrated is the famous parapoach, Salvo, now "stationed" in England. We applaud his keen interest in our favorite subject and convey his barked instructions to you . . .

BUY MORE WAR BONDS



When man's feet are firmly planted on solid ground the proud right of his dog to the title "best friend" is traditional. But when man takes wings and dire emergency arises, a new best friend serves him instead . . . and his dog as well. The parachute!

Producing "parachutes with a pedigree" is our proud assignment. After Victory the same needlecraft skills will be applied to making goods for your better living.

Stanpar

STANDARD PARACHUTE CORPORATION



SAN DIEGO, CALIFORNIA, U. S. A.

Equipment News

Recirculation Fan

Designed for the recirculation of cabin air through heaters on military craft, this 6" diameter, 2-blade fan is powered with a 1/5 hp 24-28v. motor and delivers 320 CFM at sea level against 2" water or 450 CFM at 20,000 feet against 1 1/2" water. To increase the volume by 25% and double the pressure, an increase of power to 1/2 hp is available; this increase also requires the addition of a second



propeller. The manufacturer, Dynamic Air Engineering Inc., 843 San Julian St., Los Angeles 14, is now developing another unit, 7" in diameter to deliver 600 CFM at 5" pressure.

Re-usable Hose Fitting

Illustrated is the new re-usable hose end fitting which has been developed by the Weatherhead Company of Cleveland, and adopted for aircraft hydraulic installations. Designed for medium pressure (three braid) and medium-high pressure (single-wire) hose lines, the fitting is said to lend itself to a variety of applications because of ease of installation, re-tightening or reuse. By contrast



with the swaged-end and other conventional fitting types, the new fitting requires no special tools for assembly or disassembly; two wrenches (or a wrench and a vise) are said to be the only tools required for the job. This line is designated "Q-A" which stands for "quick-attachable."

"Navigator"

A "Navigator," accompanied by an instruction booklet in dead reckoning, both approved by CAA for use on examinations, is being produced by the Mayday Flight Co., 3257 Gillham Plaza, Kansas City, Mo. The "Navigator" and booklet are designed for use in training and flight by students, instructors, pilots and navigators.

(Continued from page 66)

that it could prove its capabilities and be accepted by all air carrier participants in the endeavor. A Board of Governors, made up of key airline technical personnel should guide the overall plan, consulting on such matters as test programs, test schedules, establishment and apportionment of fees, exchange of data among the several lines, etc.

If the Air Transport Laboratory idea has any merit at all, it is as a measure of economy and efficiency. The months immediately following the war will certainly not be flowing with milk and

Engine Mounting

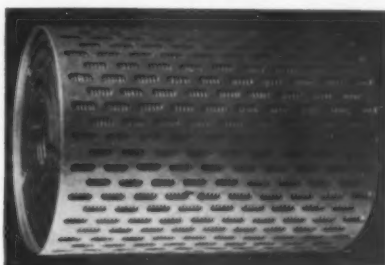
A new rubber mounting for the engines of heavy bombers has been developed by the Goodyear Research Laboratory of Goodyear Tire and Rubber Co. By reducing vibration



to a minimum, the new mounting is expected to smooth the operation of the big bombers, decrease the strain on structural parts, lessen the nervous tension and fatigue of pilots and crew, and increase the accuracy of precision instruments resulting in more accurate bombing and gunfire. The new mounting, an important contribution to stepping up the efficiency of the nation's air power, represents the successful culmination of two years of study and investigation in the Goodyear laboratory.

"Micronic Filter"

A new precision proprietary filter, originated and perfected under the supervision of the engineering and research departments of Adel Precision Products Corp., is now in production for hydraulic systems of large aircraft. Designated as the "Micronic Filter" because it filters particles of 5 microns and larger, meet-



ing the requirements of Army and Navy specifications, this new filter operates from 65° F. below Zero to 165° F. above. The filtering cartridge itself expands and contracts with the varying temperatures encountered. The model illustrated measures 6" x 8 1/2", weighs 2 lb. and has 3,800 sq. in. of filtering area. Rated output is 1,800 GPH at 100° F. with pressure drop of only 1 1/2 oz. filtering AN-VV-O-366a hydraulic fluid. Inlet opening is 1 1/2" in diameter. Filtering flow may be arranged for either direction.

honey for the airlines from the looks of things now and such saving measures should be in favor. If the Lab will be needed then, now is the time to get it under way. We are anxious to smoke out all the problems in the suggestion and either drop the plan entirely or get it going with appropriate implementation.

Is the Laboratory idea sound and should the Laboratory be established? What do you think of this suggestion of subcontracting to qualified, private engineering enterprise? What can we do to help further in achieving the desired results?

A STRONGER FACTOR in TODAY'S NEW COMPLETE CIRCUIT PROTECTION



EXTRACTOR POSTS

WITH WELDED ANTI-VIBRATION
SIDE TERMINALS

NOW UNDERWRITERS' APPROVED

Resistance to extremes of shock, vibration and temperatures is provided by the new Littelfuse Extractor Posts with electrically welded side terminals. By Littelfuse process, terminals are made integral with inside metal shell. Maximum conductivity is insured. Other Littelfuse improvements for dependability, durability, and convenience make these extractor posts outstanding examples of Littelfuse complete circuit protection.

EXTRACTOR POST No. 342001 for 3 A G Fuses

Finger-operated. Welded side terminals. Knob and body black bakelite. Positive fuse grip. Full visual shock-proof inspection. Spring-activated cup. Specially designed grip prevents fuse from dropping out.



Also furnished screw-driver operated (341001), meeting Underwriters' specifications.

Send for B/P and ENGINEERING DATA
Ask for Samples

Safeguard new equipment, or irreplaceable present equipment. Fuses, Fuse Clips, Fuse Panels, Circuit Breakers, Thermocouples, Fine Wire Products, Indicators, etc.

LITTELFUSE INCORPORATED

4757 Ravenswood Ave., Chicago 40, Ill.
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Leading Aviation Stocks

New York Stock Exchange

	Week Ended June 24				Week Ended July 1			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airl.	3,500	68 3/4	67	+1 1/2	1,400	69 3/4	68	+1 1/2
Aviation Corp.	81,400	4 1/2	4 1/2	.....	58,500	4 3/4	4 1/2	+ 1/2
Beech Airc.	1,900	8 3/4	8 1/4	- 3/8	2,000	8 3/4	8 1/4	+ 3/8
Bell Airc.	5,100	12 1/4	11 1/2	- 1/2	4,800	12 1/4	11 3/4	+ 1/4
Bendix Aviat.	10,800	41 1/2	39 1/4	-1 1/2	7,000	41 1/4	39 3/8	+ 3/8
Boeing	6,600	15	14 3/4	- 1/4	7,100	14 1/2	13 3/4	- 1/4
Convair	11,100	14 1/2	13 3/4	- 1/2	12,400	14	13 1/2	.....
Convair pfd.	3,900	22 3/4	22	+ 1/4	1,800	22 3/4	22 1/2	+ 1/4
Curtiss-Wright	41,200	5 3/4	5 1/2	+ 1/4	21,700	5 3/4	5 1/2	+ 1/4
Curtiss-Wright A	8,600	16 1/2	15 3/4	+ 3/8	8,100	16 3/4	16	+ 1/2
Douglas Airc.	5,300	54 3/4	51 3/4	-1 3/4	3,600	54	51 1/2	+1 1/2
Eastern Airl.	5,700	39 1/4	38 1/2	+ 1/4	1,800	39 1/4	38 1/2	+ 1/4
Ex-Cell-O	5,000	37 3/4	35 3/4	-1	2,200	36 3/4	35 1/2	.....
Grumman	6,700	15 1/2	13 1/2	-1 1/2	4,100	14 3/4	13 1/2	+1
Hayes Ind.	3,300	7 1/2	7 3/8	+ 1/8	13,600	9 1/4	8	+1 1/2
Lockheed Airc.	15,200	16 1/2	15 3/4	- 3/8	10,000	16 1/2	15 3/4	+ 1/2
Martin, G. L.	1,800	19 1/4	18 1/2	.....	4,800	19 1/4	18 3/4	+ 1/4
National Aviat.	4,500	12 3/4	12 1/2	+ 1/4	1,600	12 3/4	12 1/2	- 1/4
No. Am. Aviation	12,300	8 3/4	8 3/8	.....	15,300	9	8 3/4	+ 1/4
Northwest Airl.	8,500	25	23 1/4	-1	5,600	24 3/4	23 1/2	+ 3/4
Pan American	12,800	34 3/4	32 1/2	-1 1/2	9,100	33 3/4	32 1/2	+ 3/8
Penn-Central	6,600	16 1/2	15 1/4	- 1/2	3,800	15 3/4	15 1/4	+ 1/4
Sperry Corp.	21,700	28	25 1/2	+2 1/2	12,200	27 1/2	26 1/2	- 3/8
Thompson Prod.	1,900	44	43 1/4	.....	2,200	44 1/2	43 1/2	+ 3/8
TWA	7,700	22 1/2	20 3/4	+ 1/4	3,900	22	20 3/4	+ 3/8
United Airl.	17,200	29 1/2	28 3/4	+ 1/4	11,800	29 1/2	28 1/2	+ 1/4
United Airl. pfd.	200	115 3/4	115 3/4	+2 1/2	.....	.....	.....	.....
United Aircraft	13,900	29 1/4	27 3/4	- 1/4	12,500	29 3/4	28 1/2	+1 1/2
United Aircraft pfd.	600	104	103	- 3/8	1,600	104	103 1/2	+ 1/2
Wright Aero.	9,000	77	74 1/2	+1 1/2	7,000	78 1/2	75	+3

New York Curb Exchange

	Week Ended June 24				Week Ended July 1			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply B	1,500	3 1/2	3 3/4	- 1/4	2,600	3 3/4	3 3/4	- 1/4
Air Associates	500	10	9 3/4	- 1/4	400	10	9 3/4	- 1/4
Aircraft Access.	17,300	4	3 3/4	+ 1/4	74,400	4 3/4	4	+ 3/8
Aro Equipment	10,800	11 1/4	10 3/4	+ 1/4	8,200	12 3/4	10 3/4	+1 1/2
Breeze Corp.	14,100	13 3/4	12 3/4	+ 1/2	6,800	13 3/4	12 3/4	- 1/4
Brewster Aero	4,400	2 1/4	2	+ 1/4	7,900	2 1/2	2 1/4	+ 1/4
Cessna Airc.	10,800	9 1/2	8 1/2	+ 3/4	4,900	8 1/2	9	- 3/8
Colonial Airl.	1,600	8	7 3/4	- 1/4	1,100	7 3/4	7 1/2	.....
Fairchild	6,800	2	1 3/4	+ 1/4	16,900	2 1/4	1 3/4	+ 1/4
Irving Chute	700	8 3/4	8 1/4	+ 1/4	100	8 3/4	8 3/4	+ 1/4
Jacobs	5,700	3 1/2	3	+ 3/4	5,200	3 3/4	3 1/4	- 1/4
Northeast Airl.	6,100	10 1/4	9 1/2	- 1/4	2,600	9 3/4	9 1/4	- 1/4
Republic	8,800	4 1/2	3 3/4	+ 1/2	15,600	4 1/4	4	+ 3/8
Ryan Aero	1,100	3 1/2	3 1/4	+ 1/4	700	3 3/4	3 1/2	.....
Solar Airc.	1,600	3 1/2	3 1/4	+ 1/4	4,000	4	3 1/2	+ 1/2
United Airc. Prod.	2,800	7 3/4	7 1/4	+ 3/4	13,200	10 1/2	7 3/4	+2 1/2
Waco Airc.	400	3 3/4	3 1/2	+ 1/2	300	3 3/4	3 3/4	- 3/8
Western Airl.	1,300	9 3/4	8 3/4	- 1/2	2,100	9 1/4	8 3/4	.....

(Continue dfrom page 24)

status of manufacturers concerned, local manpower situation, overall costs of the products, manpower utilization, meeting of production schedules, contributions to aviation progress, needs of the aircraft industry to prepare for postwar development and production, obsolete aircraft should be cut back sooner than those of more advanced design.

The aircraft builders urged that surplus plane factories should, if possible, be sold or leased to present users after the war, or if not needed for aircraft or other production should be kept under private management as stand-by plants.

Surplus Disposal Aired

On the disposal of surplus aircraft the manufacturers said: Combat aircraft rendered unsuitable for further use should be scrapped; combat aircraft suitable for further use can be sold, leased or bartered to friendly foreign nations under the control of proper government agencies; overhaul and maintenance of such aircraft should be under the direct supervision of a competent aircraft manufacturer; planes suitable for scheduled transport operations should be disposed of through limited leases or sale without price discrimination, this being done judiciously to eliminate the possibility of pressure developing in later years to continue operation of wartime planes.

Small planes with possible non-military uses are divided into two groups. The small observation and liaison planes can be released to any market. Civilian sale of military training planes must be considered in the light of performance characteristics of these aircraft. Such equipment can be released on a wide scale for military training in schools and colleges.

Major components—engines, propellers and instruments—should be scrapped when surplus military aircraft located abroad are scrapped.

Other points in the summary were:

Government-owned airfields not required for military purposes should be made available promptly for commercial and personal flying.

To further the development of civilian aircraft production, the aviation industry should now be allowed to plan types of postwar products and use part of their facilities for this purpose if military needs are met.

Transport airlines should be aided in the development of main and feeder lines through the release of airplanes and increased use of air mail.

Personal aircraft manufacture needs more landing facilities and liberalization of Civil Air Regulations to achieve volume production.

The manufacturers want no subsidy, but do suggest a national air policy which will allow the industry to maintain leadership and design and preparedness to resume large scale military production at any time if it should become necessary.

Financial Notes

WESTERN ELECTRIC CO. directors have declared a dividend of 50 cents per share on the common stock, payable June 30 to stock of record June 23.

CONTINENTAL MOTORS CORP. reports net profits, for the six months period ending April 30, of \$2,696,185.03, after all charges including depreciation, Federal Income Taxes, Excess Profits Taxes, and after allowing for proper reserves and charge-offs. Shipments for the period increased approximately 11% over shipments at April 30, 1943.

Aircraft



Computers



Hydro neter Kit

Takes the guesswork out of fuel-weight computation. The weight of gasoline, per gallon, varies with temperature and octane ratings. This kit accurately measures the weight of the fuel actually being loaded and permits maximum and correctly distributed fuel load.

COX AND STEVENS AIRCRAFT CORPORATION

P. O. Box 30

Mineola, N.Y.

Altair POWER BRAKE VALVES

—the valves with the "honest feel"—give pilots the same pedal reaction as in manual systems since the braking effect is directly proportional to the force applied. This "feel" of direct pressure application is achieved by elimination of spring resistance, pilot-effort being resisted by hydraulic pressure. Should the pressure fail the pedal will depress with no load, thus giving the pilot immediate pressure-loss warning.

Altair Hydraulic Brake Valves incorporate positive seating poppets which eliminate leakage. They offer the further advantage of being quickly adjustable *externally* by means of the leaf spring lever. The valves carry yellow-dot winterization and seal of weight approval.

Additional production capacity is available on Altair Brake Valves. Write today for engineering and installation data. Pacific Division, Bendix Aviation Corporation, North Hollywood, California. Sales Engineering Offices in New York City and Dayton.

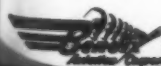
Pacific Division

Bendix Aviation Corporation

NORTH HOLLYWOOD, CALIF.



THE BRAKE VALVES WITH
the honest feel!



DESIGNERS AND MANUFACTURERS OF RADIO AND HYDRAULIC EQUIPMENT—OUR PART OF THE INVISIBLE CREW

© 1944, Pacific Division, Bendix Aviation Corp.

Jig-Saw Pattern Unfolding In Manufacturing Policies

Fluctuating Tactical Requirements Bringing Changes in Production

VARIOUS AIRCRAFT manufacturers last fortnight were permitted to reveal some of their production records, changeovers in assembly line plans and new contracts.

These developments fitted into the jig-saw pattern of changing aircraft manufacturing policies dictated by fluctuating tactical requirements and the general progress of the war. However, cutbacks and major changes programmed for the remainder of the year and the first half of 1945 remained as restricted information on the books of the Aircraft Production Board, having been divulged only to top-flight industry executives.

Among the manufacturing and production data released during the fortnight by individual firms were the following:

LOCKHEED AIRCRAFT CORP., Burbank, Calif., which has followed a sharply curtailed hiring program since late last year, announced that it will need 5,000 unskilled and semi-skilled production workers within the next 30 days. The swing to increased hiring is brought about by new model production for the Navy at Factory A and stepped-up production on the Constellation. Plant B is undergoing a \$3,156,379 alteration to meet production schedules of a new-type plane.

AERONCA AIRCRAFT CORP., Middletown, O., it was revealed, has completed its order for single-engine Noorduyyn Norseman planes (the UC-64, 550 hp.),

only Canadian plane built in the U. S. New contracts for components were reported, however.

BREWSTER AERONAUTICAL CORPORATION'S Government-owned plant in Johnsville, Pa., has been reopened as an aircraft modification center operated by the Navy and employing about 2,500 persons. It will be operated as an adjunct of the Naval Air Material Center at Philadelphia and besides modification work will handle some pressing engineering projects for which no other facilities are available. The Brewster lease was terminated.

BELL AIRCRAFT CORP., Buffalo, N. Y., announced completion of the 10,000th fighter airplane. Most of these were the Airacobra, but full production is now underway on the P-63 which the company described as "a new fighter with low drag wing and a two-stage, supercharged Allison engine which will make it an efficient plane at any altitude up to 38,000 to 40,000 feet." Undisclosed numbers of Airacometts, the jet propulsion plane (P-59-A), are included in the production figure. Manufacture of spare parts, when measured in plane equivalents, increases the total fighter airplane production to 12,300, a total of 46,740,000 airframe pounds. The 10,000 figure does not include any of the B-29's produced by Bell at Marietta, Ga.

REPUBLIC AVIATION CORP. President Alfred Marchev made public a letter from Maj. Gen. Bennett E. Meyers, acting commanding general of the AAF Materiel Command, stating that the AAF plans to maintain existing production schedules of Republic's P-47 Thunderbolts. Company has received additional contracts totaling \$154,639,000, bringing unfilled orders for Thunderbolts to over \$583,000,000.

NORTH AMERICAN AVIATION, INC., Inglewood, Calif., is completing a plant conversion from combined bomber and fighter production to solely P-51 Mustang fighter production "without interruption to the flow of airplanes to the armed forces." In the future all B-25 Mitchell bombers will be made by NAA at its Kansas City plant.

CURTIS-WRIGHT CORP., Buffalo, N. Y., has been assigned a contract to produce an undisclosed number of forward and aft center fuselage sections for the C-46 Commando.

FORD MOTOR CO., Willow Run plant announced the production of its 5,000th Liberator in "less than two years." Half of the output was produced during the first six months of this year. Four thousand of the planes were built in the last 12 months.

FISHER BODY DIVISION, General Motors Corp., announced completion of the 100,000th gyro-horizon indicator, used to guide the B-29 and other planes to enemy targets. The 100,000th directional gyro-indicator, companion instrument to enable a plane to maintain its course under adverse weather conditions, is near completion.

GLOBE AIRCRAFT CORP., Fort Worth, Tex., has completed 14 months of produc-

Manufacturers Look to Cook for Materials, Parts, Facilities

Fifteen thousand manufacturers in every section of the United States look to Wright Field for raw materials, parts,



Gen. Cook

and manufacturing facilities needed in the production of planes. And the man responsible for seeing that they get it is Brig. Gen. Orval R. Cook, chief of the Production Division, AAF Materiel Command.

Gen. Cook has been on flying status since he entered primary flying school at Brooks Field in 1922, and he has had experience with many types of fighter, bomber, transport, and trainer aircraft. He has been chief of the Production Division since 1943.

Northrop-Hendy Doing Secret Engineering

Northrop Aircraft in a recent announcement to employees told of orders for the Black Widow, P-61 night fighter, for the Marine Air Corps as well as the Army Air Forces. In this stepped-up schedule, LaMotte T. Cohu, general manager, stated company needs 2,000 additional production line people immediately. A research project being carried out by Northrop during past three years for U. S. Navy and Army Air Forces will now come under the jurisdiction of Northrop-Hendy Co., a recently formed subsidiary of Northrop and Joshua Hendy Iron Works, Sunnyvale, Cal., in which the airframe company and Hendy each own 50% of the stock.

The Hendy Co., one of the West's largest builders of steam and Diesel engines, steam turbines, generator sets and naval ordnance items, will supply machine facilities and production experience for a secret engineering project directed by A. J. Phelan, chief engineer of Northrop research group.

tion on AAF contracts and now has new contracts for fuselage nose assemblies for C-46 Commandos which the company is to build for both Curtiss-Wright Corp. and Higgins Aircraft under separate contracts. Another contract calls for reworking wings on AT-17's and UC-78's. Tooling is well advanced.

WEST COAST CONTRACTS: Louis M. Drevs, chairman of the Los Angeles Production Urgency Committee, announced the following new contracts awarded to California plants: North American, \$100,960,000 for P-51s and a new, unannounced model; Douglas, Santa Monica, \$125,000,000 for C-54s, with part of the work to be placed at company's El Segundo plant; Northrop, \$74,000,000 for P-61 night fighters; Consolidated Vultee, Downey plant, \$601,043 for spare parts for Oxford "V" planes.

John Friedlander Succeeds Brother as Head of Aeronca

John W. Friedlander has succeeded his brother, Carl I. Friedlander, as president of Aeronca Aircraft Corp., the latter being of military age and desirous of arranging the executive duties of the corporation so that there would be no disruption in the event of his entrance into the military service.



John Friedlander

In addition to the president, the officers of Aeronca now are E. S. Sutherland, executive vice president; Carl I. Friedlander, vice president; E. H. Wideman, vice president and director of purchases; and A. H. Helmers, secretary-treasurer.

John Friedlander is an experienced pilot and, as a member of the Civil Air Patrol, has helped promote the training of pilots for wartime duties.

Riddle Sells U. S. Interests

John Paul Riddle, president of Embry-Riddle School of Aviation, has sold his entire interest in the school to John G. McKay, Miami attorney. Riddle will concentrate his efforts on the Technical School of Aviation, which he operates for the Brazilian Air Ministry, and on other foreign business.

The Brazilian school will be doubled within six months, and Riddle will continue to train American instructors at Miami in Portuguese and Latin American customs for work in that school. Riddle expects to spend half his time in this country and will have headquarters in Miami. McKay is vice president and counsel of Embry-Riddle Co. and co-owner with Riddle of Riddle-McKay Aero College at Clewiston, Fla.

Industry Requests 30 Days Notice on Ending of Contracts

The aircraft manufacturing industry is asking for 30 days advance notice of contract terminations, Francis A. Callery, vice president in charge of finance of Consolidated Vultee Aircraft Corp., declared in Washington recently.

"If we have that notice and cancellations are complete, we will be able to submit claims within 30 days after the termination date," he added. Consolidated already has established a termination department at San Diego with committees at work in each plant. Work of this staff will proceed much more rapidly when the Army has determined exactly what information must be included in claims.

The aircraft industry should act as a unit to work out with the Army administrative procedures for contract cancellations, Callery declared. Expressing almost complete approval of the contract termination bill passed by Congress, he said the armed forces must now set up smoothly functioning machinery to handle terminations.

He pointed to the record of Consolidated in handling the termination of production on the Vultee basic trainer. None of the decline in man-hour productivity usually encountered after cancellation notice is received was experienced since the last trainer came off the production line only 15 minutes behind schedule. In addition, after producing 11,600 of the trainers, only \$1,500 in parts were surplus after the final plane was completed.

"We would rather have our contracts terminated than cut back," he emphasized. "We don't want the government spending money for planes it doesn't need just to let us taper off production."

Callery also indicated a desire on the part of all aircraft companies to be informed of the projected military plans regarding cutbacks and termination, even though the planning is only tentative.

"The backbone of postwar aircraft production will be military orders," C. W. Perelle, vice president for manufacturing, believes. He predicted that a study of military plans for the postwar period would be more accurate as a guide to the

Readjustment Division Set Up For AAF Contract Terminations

HIGHLIGHTING current planning for eventual demobilization of the wartime aircraft industry, the Army Air Forces Materiel Command last week announced the creation of a Readjustment Division to handle all AAF contract termination matters.

Col. E. V. Rawlings was named chief of the new division which will have its headquarters at Wright Field, Dayton, O. As chief of the Resources Control Section of the Materiel Command's Production Division since last May, Col. Rawlings has worked closely with aircraft manufacturers and is familiar with the many problems involved in forthcoming cutbacks.

The Readjustment Division has absorbed all termination duties, including settlement of claims arising out of terminations, performed in the past by the Procurement and Production Divisions of the Command.

Primary aim of the Division is to establish immediately machinery for the effective handling of contract termina-



Rawlings

Contract Termination Unit Urged by Grube

The prime contractor bears the basic burden in settling terminated war contracts and must therefore establish a strong, able organization to formulate policies and procedures, Karl P. Grube, Douglas termination manager, told the AAF contract termination school in Los Angeles.

He declared this organization should be headed by an individual with administrative ability, surrounded by a staff of experts familiar with accounting, legal, manufacturing, purchasing, property disposal and tooling phases. This unit, he said, must work with speed and efficiency to stop all work ordered terminated and advise all affected vendors to do likewise, prepare necessary inventory of materials allocable to terminated contract, assist vendors in settlement of claims, dispose of surplus property, organize accounting system to collect costs essential to performance of mechanics of termination and make every effort to comply with requests of government contracting officers and government directives.

future size of the industry than a study of all other markets. "We will wait to see how the Government's plans develop, before we will know what to do with our plants," he said.

Stating that the lightplane is still not a practical form of transportation, Perelle said the price for private planes should be brought down by the introduction of lighter instruments, and cheaper, faster engines.

tions, cutbacks, and disposal problems which will arise as a result of changes in the AAF's tactical requirements. Col. Rawlings declared that the job, although tough, "can be accomplished with minimum effect on the national economy, through careful planning."

This is essential, he added, in order to place the affected facilities in a position to produce other supplies urgently required.

While economy dictates prompt cancellation of orders for equipment no longer needed, Col. Rawlings said that every effort will be made by his division to minimize the effect of reduced requirements on both management and labor.

Announcement of the new division was made by Maj. Gen. B. E. Meyers, who became commanding general of the Materiel Command early last month, succeeding Maj. Gen. Charles Branshaw. The latter has been temporarily relieved of duty due to ill health.

Gen. Meyers said these plans "reflect the importance placed by the AAF on the gigantic job of gradual demobilization of war production in the aircraft industry which will be necessary after victory."

Contract Schools Opened

Schools in contract termination to instruct aircraft contractors and subcontractors are being opened this month on the West Coast, according to announcement by Brig. Gen. Donald F. Stace, supervisor of the Western Procurement District, AAF Materiel Command. Classes began in Los Angeles July 10 and in San Francisco July 11. Talks are being given by contracting authorities from the Materiel Command, the Readjustment Section of the Army Service Forces and from industry.

Expansion Approved

U. S. Engineers have approved a new \$2,238,999 facilities expansion program for Consolidated Vultee's Fort Worth division.

It is in addition to a recently announced \$2,478,148 facilities expansion program, work on which is under way, which includes a 100,000 sq. ft. warehouse, vertical door 115 ft. wide and 40 ft. high at the end of the assembly building, addition of 11,000 ft. of railroad track and switching and expansion of yard and apron paving facilities.

Curtiss-Wright Agrees To Pay Overtime Wages

Curtiss-Wright Corp. has agreed to pay \$76,793.19 in overtime wages to 671 employees, the Department of Labor regional office in New York has announced. The employees had previously been classified improperly as exempt and the firm has voluntarily taken steps to pay their retroactive overtime. Otherwise, C-W is in full compliance with all provisions of the Federal wage-hour law, the Department said.

Termination Training Course Taken by 3,000 on West Coast

THREE THOUSAND West Coast war contractors have just finished a four-day termination training course, both in San Francisco and Los Angeles, sponsored by the AAF Materiel Command, to outline regulations and requirements which will speed the preparation of termination claims, disposal of surplus property, and provide for quick negotiation of claim settlements.

Military authorities, specially trained in termination procedures, addressed the classes which included representatives of both prime and subcontractors. In turn, prime and subcontractors submitted specific questions and problems which were studied in open forum discussions.

With the San Francisco classes opening one day later than the Los Angeles course, military speakers worked on schedules which permitted participation in both cities. Among the Army representatives was Brig. Gen. F. M. Hopkins, chief, Resources Division, AAF, who lead panel discussion on questions presented by contractors. Assisting him were Col. David N. Hauseman, chief of Readjustment Division, Army Service Forces, and Lt. Col. F. W. Parker, Readjustment Division, ASF.

Lt. Col. A. E. R. Peterka, chief, Property Disposal Staff, Resources Control Section, Production Division, Wright

Field, headed the property disposal discussion, with its application to organization and relations with terminations. Col. E. S. Pillsbury, chief, Termination Section, Materiel Command, discussed settlement of cost-plus fixed fee contracts and subcontracts. Lt. Col. Fladger F. Tanner, chief, Contract Audit Branch, AAF, covered the audit phase.

In Los Angeles the contractor's view of termination was given by Karl P. Grube, termination manager of Douglas Aircraft, for the prime contractor. Roland Pagen, comptroller, Avion, Inc., presented the subcontractor's view.

The San Francisco course included Navy and Maritime Commission authorities. Captain A. B. Court, inspector of Naval Materials, 12th Naval District, outlined the Navy's termination problem.

Southern California's aircraft industry more than welcomed this initial cooperative step in meeting termination problems, the solution of which may mean existence of not only an aircraft industry but retention of an industrialized West. The rapidity and timeliness of the educational program as set up for the Western Procurement District by its supervisor, Brig. Gen. Donald F. Stace, was hailed on all sides as a far-sighted and encouraging move.

Although industry members are fully



50,000TH ENGINE—Within a month after Pearl Harbor Buick produced its first Liberator Bomber engine. Within a month after D-Day the firm manufactured its 50,000th Pratt & Whitney engine. With the milestone motor is Harlow H. Curtice, General Motors vice-president.

aware that the war is far from won, the magnitude of the task ahead and the more immediate readjustments to be faced when cessation of European hostilities result in downward schedules have grown daily in urgency.

A backlog of 3½ billion dollars is involved in 1200 airframe contracts affecting thousands of additional subcontracts in the seven Western states. An estimated 375,000 workers are employed in the area's industry.

It is understood that the recent Douglas termination on A-20's represented a contract in excess of \$275,000,000 and over 7600 subcontractors throughout the United States were concerned with the termination. Over \$50,000,000 of surplus property from sheets of raw metal to partly built airframes must be disposed.

One contractor expressed view that the terms of cancellation were of far more import than advance notification. "Realistic agreements keyed to completion of work-in-process at the individual plants would do much to ease the complicated process. Recently a major termination was carried out in which the major sub-assemblies were completed while raw materials in fabrication were scrapped. This was certainly an efficient arrangement, worked out on an in-plant basis."

From a military spokesman came the observation, "It is essential that war contracts be curtailed in the most efficient manner possible to insure maximum use of war industries to maintain the large war production program operating under existing and newly awarded contracts. At the same time, an effort is being made to provide for a gradual transition from war to civilian production when that condition becomes possible."

Kemmerrer Forms Firm

V. A. Kemmerrer, who coined the slogan "Look to Lockheed for Leadership," has resigned from Lockheed Aircraft Corp. to form an advertising agency in Hollywood under the name of Kemmerrer, Inc.

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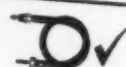
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Soldiers Help Build Black Widow P-61s While In Hospital

Convalescing soldiers are now helping to build the Northrop "Black Widow" P-61 night fighter under a vocational instruction program started at the Army's Birmingham Hospital, Van Nuys, Cal., in conjunction with the aircraft company.

The veterans are employed as Northrop trainees on a salary basis while learning, and, when capable of doing the work, will be paid on the same wage scale as workers in the Northrop factory.

A sheet metal and machine shop school has been installed on the hospital grounds, where industrial teachers, supplied by the factory, offer instruction to all those physically capable. Patients unable to leave their beds are kept busy sorting and classifying parts such as bolts, washers and fasteners.

A recent check showed 5000 parts were turned out from the hospital in a single day.

As a further step in the program, patient students visit the Northrop factory to see the actual installation of the parts which they fabricated. The company plans to employ some of the students at the factory, and other positions will be open to the veterans when they recuperate from their war injuries sufficiently to enter factory work.

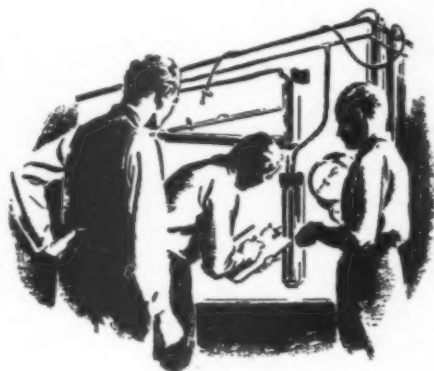
James L. McKinley, head of the industrial training department at Northrop, is civilian coordinator for the program. He will be on leave of absence until the program is fully organized. Col. Alvin C. Miller is commanding officer at Birmingham, first Army hospital to inaugurate such a rehabilitation program, and Major Daniel R. Mishell, chief of the hospital's reconditioning division, is directly in charge for the military.



WOUNDED AT WORK—Soldiers convalescing in a hospital at Van Nuys, Cal., are helping build Black Widow night fighters. Sgt. John Potosky works on wing while Northrop Instructor A. W. Hilyard supervises.

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Michaels

Charles A. Koch has resigned as production engineer at the Ford Willow Run plant and is now sales engineer of the Pollak Manufacturing Co., Arlington, N. J.

James A. Healy, formerly general supervisor of contract administration for Consolidated Vultee's Fort Worth Division, has been named assistant chief of contracts. Convaair also announces appointment of W. A. Armstrong as chief of materials at Vultee Field, succeeding Reuel G. Phillips, who has been transferred to San Diego, and appointment of Nelson Metcalf as chief industrial engineer of the Allentown Division.

Allen W. Harris, former aviation editor of the Baltimore Sun, has joined the public relations staff of Fairchild Engine and Airplane Corp.

L. A. Kavanagh, formerly executive assistant to the president of Interstate Aircraft and Engineering Corp., has been named secretary of the company. W. C. Barnett, formerly assistant secretary-treasurer of Interstate, has been appointed treasurer. The two will assume the duties of L. B. Cameron, former secretary-treasurer, who has resigned.

Harry W. Gray, until recently assistant to the general sales manager of the Airtemp Division, Chrysler Corp., has joined Manning, Maxwell and Moore, Bridgeport, Conn., gauge and valve manufacturers, as an instrument sales engineer.

R. G. Akin has been named sales manager of the Midwest Division of Littelfuse, Inc. He was formerly a market researcher with Swift and Co., at one time assistant director of sales with John Morrell and Co., and national sales manager of the Cellulose Tubing Division of Sylvania Industrial Corp.

Walter A. Clouser, for 18 years years with Wilkening Piston Ring Co., recently as sales manager, has been named sales and service engineer of the Muskegon Piston Ring Co.

Max Powell has been appointed vice president in charge of technical research for Harvill Corp., but retains his former duties as head of standard controls and chief metallurgist.

E. J. Zimmer, Jr., has been appointed assistant to the vice president and director of sales of Rheem Manufactur-

(Turn to page 84)



Clouser



Gray



Akin

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—MANUFACTURING—

ADMA Boasts 16 Distributors 32 Manufacturers; 2 New Firms

THE AVIATION DISTRIBUTORS and Manufacturers Association has a total of 16 members in the Distributors' Division and 32 members in the Manufacturers' Division, it was revealed at the recent mid-year meeting of the association's officers and directors in Chicago. Two new members were elected at the Chicago meeting: Continental Motors Corp., Muskegon, Mich., and Valentine and Co., Inc., New York City.

ADMA has designated three representatives to serve on the Joint Aviation Show Committee, formed by the association last month with the Aeronautical Chamber of Commerce, National Aviation Trades Association and the National Aeronautic Association. These are Arthur S. Brown, Scott Aviation Corp.; W. F. Scott, Jr., Supply Division, Inc.; and George A. Fernley, secretary of ADMA.

Brown, representing the Civil Aviation Joint Legislative Committee, urged members to express their views with reference to proposed and pending legislation "to protect the interests of the association."

ADMA's budget committee recommended immediate adoption of a dues schedule of \$15 monthly for those distributors having an annual volume of \$100,000 or less.

The Chicago convention decided that

the Second Annual ADMA Meeting will be held at the Jefferson Hotel, St. Louis, December 5 to 7, including a merchandising or sales clinic.

Double-Action Engine Saves Weight, Space

A new strategic weight and space saving auxiliary engine weighing only 5.1 pounds per horsepower has passed tests just completed by the Tabor Manufacturing Co., Philadelphia.

Application of the double-acting principle whereby the two cylinders accomplish the work of four is credited with enabling the engine to develop up to 32 horsepower on two cylinders.

Cooling problems have been coped with by drawing off heat from inside the cylinders as well as outside. Inside cooling is done by drawing the carburetor air through the specially designed cylinders.

Use of the double-acting principle in which explosions take place on each side of the piston head instead of just on top is said to have resulted in a saving of approximately one-third in weight. The engine is 26 inches long and high by 21 inches wide.

Modification of B-29's Rushed by Continental

A special modification project is being carried out on the Boeing Superfortress B-29 by Continental Air Lines at its Denver modification center.

To meet the initial quota, Continental's plant worked 12-hour shifts around the clock, seven days a week, for 30 days.

Since completion of the special project, Continental has gone on a regular production schedule for the B-29 with monthly quotas set up through September.

Testing Facilities Expanded

Eight new production test cells, each capable of handling engines up to 4,000 horsepower, are being built at the East Hartford, Conn., plant of Pratt & Whitney Aircraft Division, United Aircraft Corp. The new construction is in preparation for quantity production of one of the new models of increased horsepower.

Robots Invented in U. S.?

Self-propelled aerial torpedoes, similar to the German robot planes, were invented in the United States as long ago as the last war, the Office of War Information reports from data supplied by the National Inventors' Council and the United States Patent Office, Department of Commerce.



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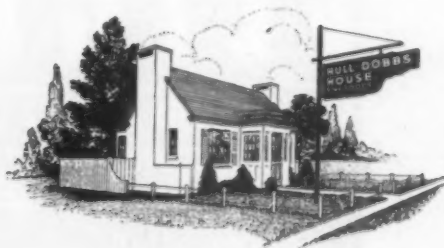
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SELECTION: The training of your postwar sales force should begin NOW. We can, through our Personnel Evaluation Service, help you select your salesmen.

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**ALUMINUM
TANKS**

CONTRACTORS TO ALL LEADING
ENGINE AND PROPELLER
MANUFACTURERS

B-H AIRCRAFT CO., Inc.
LONG ISLAND CITY 1, N. Y.

(Continued from page 27)

six-passenger, single engine equipment, he operated Los Angeles to San Francisco in 1931 on one hour, 58 minute schedules, which better today's schedules by two minutes.

On the Mexico City route, the Orions made the trip in one day on a three round-trip per week basis. There was 90 per cent completion of schedules even without benefit of radio, weather reports or lighting facilities.

In 1916, two of 1944's test pilots were in flight training. One was a Missouri boy in England, receiving his first hours in a Farman trainer as a volunteer in the Canadian Air Force. The other was a Russian youth testing his first wings in a 50 mile-per-hour Farman at St. Petersburg.

Will Dougan, the Missouri boy, at 50, has over 600 hours in P-38 test flights. In the intervening years, his backlog of aviation has included barnstorming, flying for oil companies and running an airport. His 20-year-old son just received his wings and is a combat cargo pilot of this war.

Colorful Experiences

The stories of Dougan's experiences as related by his teammates match in color his years of flying. When Dougan was shot down over Germany, he was so seriously wounded that he lay in a coma for three days. The Germans placed him in a dug-out reserved for those about to die.

When taking his physical over three years ago at the start of his Lockheed flying, an x-ray found he had been carrying a bullet in his ribs all these years. He's taken two bullets instead of the one one recovered in the German dug-out.

The Russian pilot, Alex Black, flew with the Russian Air Force against the Germans. Shot down in action around the Baltic, he escaped to his own lines. When the Russian Revolution came Black was ordered to fly against the White Russians in the Volga region.

Purposely crashing and burning his plane to give the impression that he was killed and burned with the craft, he escaped to Czechoslovakia. From thence emerged Alex Black, cheerfully knowing that the only thing he'd lost with the

crashed plane was the identity of his given name.

Joining the White Army, he fought with it on the push-back across Russia to Siberia and Vladivostok. There, remnants of the White Army had both the Reds and the Japanese to fight. "Then," Alex remarked, "I got tired of fighting."

He entered China, riding a Japanese mail train. For the next two years, he was technical advisor to a Chinese War Lord, supervising his mechanical fleet of one Ford and two General Motors trucks, and building a plane, which was a modified copy of the Farman trainer.

Arriving in San Francisco in 1923, Black bought a "Jenny" from Walt Varney. Barnstorming in the "Jenny" preceded the opening of a flying school at Mills Field in 1928. Eight years later he gave up the flying school for three years of airline piloting in Central America. In 1939 Black went to Lockheed to fly another war.

Rounding up the roll-call from the last war, there is Ted Lundgren, flight operations, who headed the Union Oil Co. Aviation Department and was technical adviser for the Southern Cross flight; Curry Sanders, chief test pilot at the Lockheed Navy Base, well-known Louisiana flyer; and Bart Stevenson, lone representative from the Navy, who was formerly test pilot and traveling salesman for Monocoupe, operator of a flying service at Kansas City, and with Spartan Aircraft before coming to Lockheed.

Veteran airline pilots include E. A. Jaquish, chief of operations, whose log book is marked with 12,000 hours of flying. He flew for TWA for six years. In one year at Lockheed, 1940, "Jake" made 64 transcontinental deliveries of Hudsons.

United Air Lines alumni are Al Gilhousen and Ray Meskimen, now in the 14,000 hour bracket. Fred Dick is a veteran of old American Airways, Delta Air Lines and Chicago and Southern. Eddie Martin flew for American Airlines, in addition to operating the Southern California flying service which carries his name and serving as pilot-salesman for the MacMillan Petroleum Corp.

At random, you can spot the names of men who've been at the game for years . . . George McEntire of Texas, Duncan McIntyre of Oklahoma, Orville Scott from St. Louis, Bert Rhine from Los Angeles.

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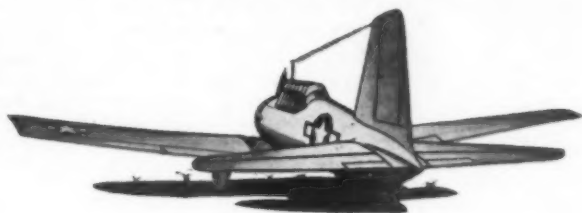
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PLASTICS . . . REINFORCED WITH

FIBERGLAS*

ARE HELPING MAKE AIRCRAFT STRONGER,
LIGHTER AND SAFER



Born of the Nation's quest for stronger and lighter aircraft, glass-reinforced plastics are today possibly the most discussed new development in aviation.

By combining certain plastics with Fiberglas—glass in the form of fine fibers—the plastics industry has created a revolutionary new structural material. A material actually superior to metals in many respects, and surprisingly light in weight.

Besides having great strength-to-weight ratio and low specific gravity, these new Fiberglas-reinforced plastics have demonstrated exceptional ability to absorb shock. Moreover, they have exceptional dimensional stability (neither stretching nor shrink-

ing under moisture changes), and unusually high fatigue resistance under vibration and stresses.

Still another advantage of these Fiberglas-reinforced plastics is the ease with which they can be fabricated into complex shapes and forms. Expensive dies and great pressures aren't needed. Parts requiring close tolerances may be accurately machined.

While, naturally, much remains to be learned about this new material, considerable data are now available from exhaustive tests recently conducted by Army Air Corps Engineers at Wright Field. For the story of these tests . . . and other pertinent articles on this new material . . .

OTHER AIRCRAFT USES OF FIBERGLAS



**XM-PF
AIRCRAFT INSULATION**

XM-PF is a lightweight, semi-rigid bat of fine glass fibers. It is fire-safe and has exceptionally low moisture pick-up, even under conditions of extreme humidity. It is available in 1 lb. and 1½ lb. densities and serves two distinct purposes in aircraft construction.

As acoustical insulation, it has a merit factor over 80. And as thermal insulation, it provides optimum efficiency per pound of weight.



Another type of Fiberglas thermal insulation, these fireproof blankets are made of Fiberglas Insulating Wool, Type N, faced with Fiberglas Cloth stitched with glass thread. Available in 1½ lb. and 3 lb. densities, they are extensively used to insulate gasoline heater exhausts, heat exchanger ducts, other high temperature pipes, etc.

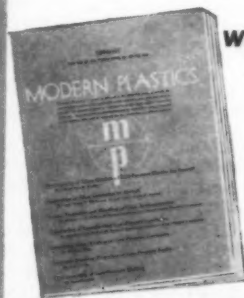


Another all-glass product—woven from Fiberglas yarns. While extensively used for insulating motors, generators and other electrical equipment, other applications have been found for these non-stretching, incombustible tapes in aviation—such as covering of thermal insulations on hot air ducts, ties for removable insulating pads, etc.



The use of Fiberglas cloths as base fabrics for coating with natural or synthetic rubbers, vinyl compounds and other coating materials, provides a finished material having new and unusual qualities—great dimensional stability and strength under the most severe conditions of humidity, temperature and hard usage in combat. Widely used in the fabrication of gun sight screens, insulation covering, flexible connections, various types of coverings, bunks, fuel cells, water tanks and many other items.

Write for FREE booklet on Glass-reinforced Plastics!



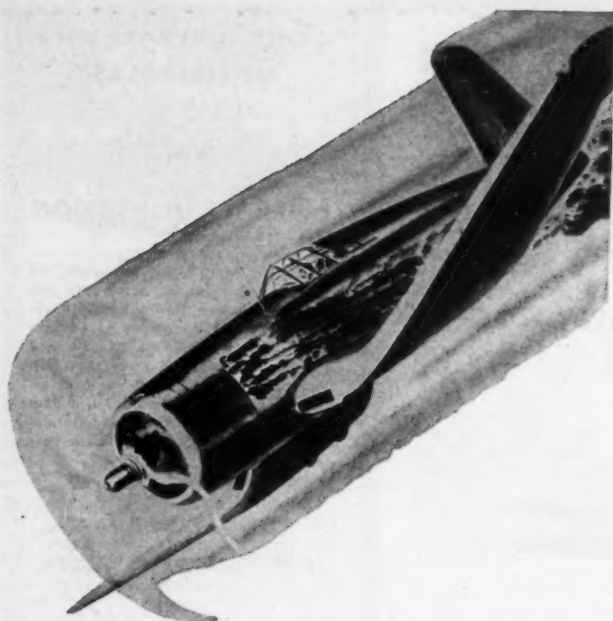
This booklet consists of reprints of seven informative and authentic articles which appeared in the May issue of "Modern Plastics", describing the nature, characteristics and application of this new structural material. Write for your copy today!

Owens-Corning Fiberglas Corporation, 1894 Nicholas Building, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.

FIBERGLAS ..A BASIC MATERIAL

*T. M. Reg. U. S. Pat. Off.





Heavier "fire power" licks this enemy, too

Fanned to fury by the terrific slipstream, a motor fire was the toughest foe a flyer could meet. Now it's been conquered—by the fire killing power of the Kidde Built-in Extinguishing System.

Here's how it works: At the first sign of fire, pilot pulls a handle, sends carbon dioxide gas from Kidde cylinders to flood the engine compartment and snuff out the blaze. Elapsed time: about three seconds!

Gases-under-pressure, stored in lightweight Kidde cylinders, are doing many jobs that will hasten the arrival of the Age of Flight. If you have a problem in this field, our Research and Development Department may have the solution. Drop us a line!



WALTER KIDDE & COMPANY, INC.,
140 CEDAR STREET, NEW YORK 6, N. Y.

Manufacturing Personnel

(Continued from page 78)

ing Co. He had been associated with E. I. du Pont de Nemours and Co., since graduating from Cornell University in 1926.

William P. Brotherton, president of the San Diego Junior Chamber of Commerce, has been appointed to the public relations staff of Ryan Aeronautical Co.

W. G. Lewellen has been named assistant to E. F. Johnson, vice president of General Motors in charge of the Eastern Aircraft and Dayton Divisions. He was formerly assistant general sales manager of Chevrolet Division and a member of GM's central office war staff.

A. C. Michaels, superintendent at Goodyear Aircraft Corporation's Plant D, Akron, O., has been named plant manager at Goodyear's subsidiary near Phoenix, Ariz. V. L. Folio, assistant superintendent at Akron, succeeds Michaels, and Ray Hudson, former superintendent at the Arizona plant, returns to Akron on special experimentation and development work.

Howard Field, consulting aircraft engineer on the West Coast, has been retained by Aeroquip Corp. to perfect engineering details of the company's newly developed "Hydro-fuse."

Sperry Nets \$7,598,343 in '43

Net income of the Sperry Corporation and its wholly-owned domestic subsidiaries for the year ended last December 31 was \$7,598,343 or \$3.77 a share after provision for taxes, and after setting aside an additional \$3,778,110 for postwar adjustments, Thomas A. Morgan, president, announces in the 1943 annual report to stockholders.

The 1943 net income compares with \$5,777,961 or \$2.87 a share in 1942, Morgan declared. The company increased its reserve for postwar adjustments in 1943 by \$3,784,110 resulting in a total reserve of \$7,250,000 at December 31.

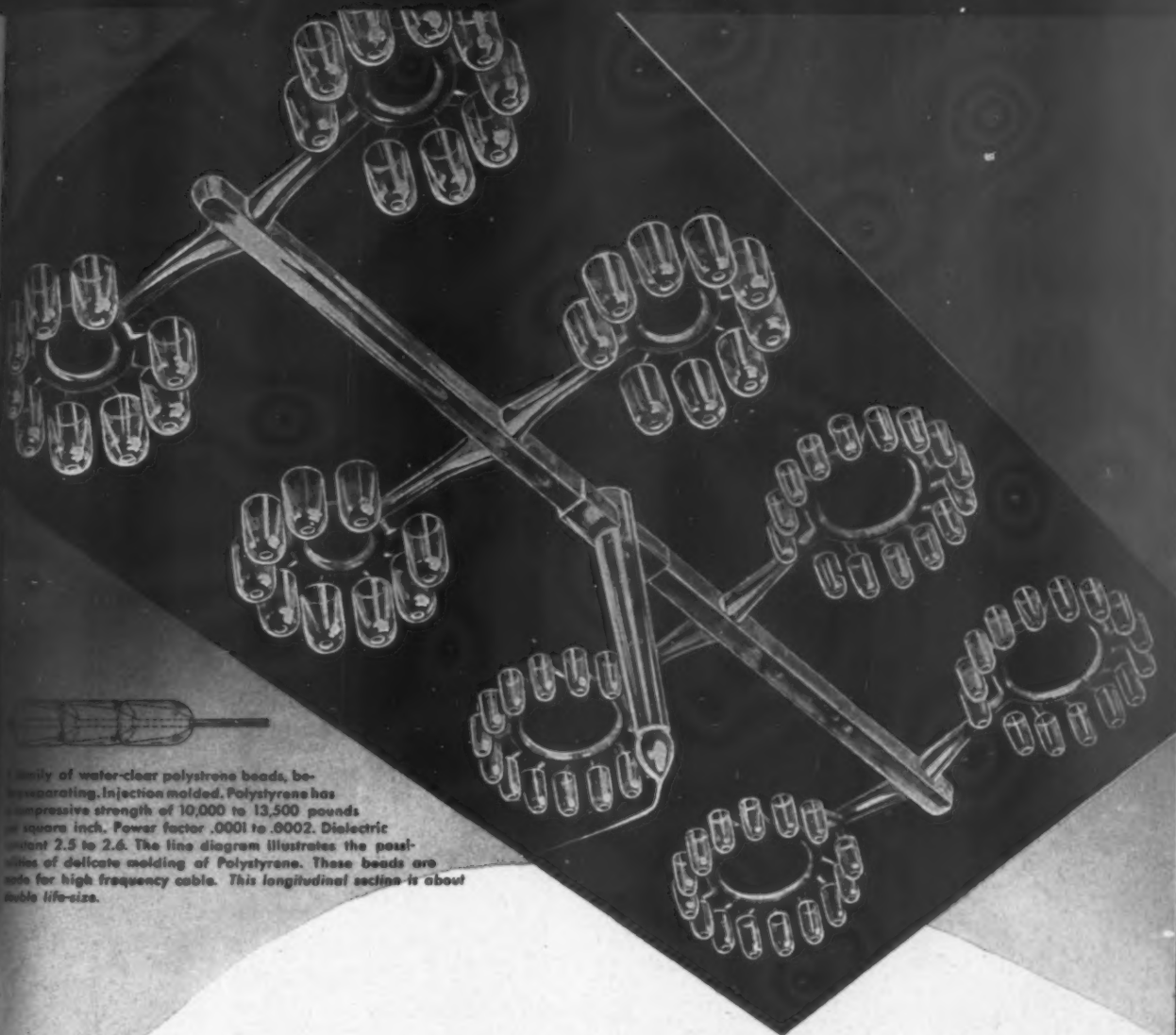
Morgan said the 1943 shipments of Sperry and its subsidiaries, "devoted exclusively to helping the armed forces win this war as soon as possible," were \$460,006,689, which, based on relative prices, were double those of the previous year. "These shipments," he said, "included a number of products recently developed."

"Continuing the policy adopted in 1942 of avoiding excessive profits in the war period, Sperry made substantial reductions of prices in existing contracts as well as in new contracts," Mr. Morgan declared, and as a result, the value of shipments and gross profits in 1943 was reduced by approximately \$54,000,000.

Sperry acquired all of the capital stock of the Wheeler Insulated Wire Company of Bridgeport, Conn., during 1943, Morgan revealed. The Wheeler company is engaged in the production of wire transformers and fluorescent valves and since Sperry's acquisition its production has been increased and "it is believed that there will be a continuing demand for this company's products after the war."

Total assets and total liabilities of the corporation on December 31, 1943 of \$276,373,937.81 contrast with \$215,662,615 on December 31, 1942. At the end of 1943 the company was owned by 25,323 stockholders with an average holding of 80 shares each. The stockholders' list included 11,263 men and 10,935 women, plus 1,112 lots jointly held by men and women. The balance of the shares was held by 2,013 firm and institution shareholders of which 86 were charitable or educational institutions, and 1,927 were banks, insurance companies, and trusts and estates.

Dividends totaling \$1.50 per share were declared by the directors in 1943. This was the same amount paid in 1942. On June 23, 1944, the directors declared dividends of \$1.00 per share payable on July 15 to stockholders of record on July 3.



Family of water-clear polystyrene beads, being separating. Injection molded. Polystyrene has a compressive strength of 10,000 to 13,500 pounds per square inch. Power factor .0001 to .0002. Dielectric constant 2.5 to 2.6. The line diagram illustrates the possibilities of delicate molding of Polystyrene. These beads are made for high frequency cable. This longitudinal section is about double life-size.

Synthetics for Industry

In the handling of plastics a complete knowledge of the characteristics of the various synthetics, their possibilities and the technique of working with each is fundamental. That is equally true of experience and skill and up-to-date equipment. With all of these, Amphenol, has consistently been a leader in this rising industry.

Practical experience in molding synthetics for industrial use dates back, at Amphenol, to the days, many years ago, when "plastics" meant Bakelite. Today Amphenol has batteries of up-to-date injection molding, compression molding, and extruding machines—many specially designed and custom built.

The help of Amphenol's engineers in the choice of materials, planning and designing of products is available to those interested in keeping step with the times in the use of plastics.

Ultra high frequency R. G. cables. Dielectric, polyethylene, extruded with inner conductor centered to within 10%. Diameter tolerance permitted .010". Vinylite outer covering extruded over wire, dielectric and braided copper shield.

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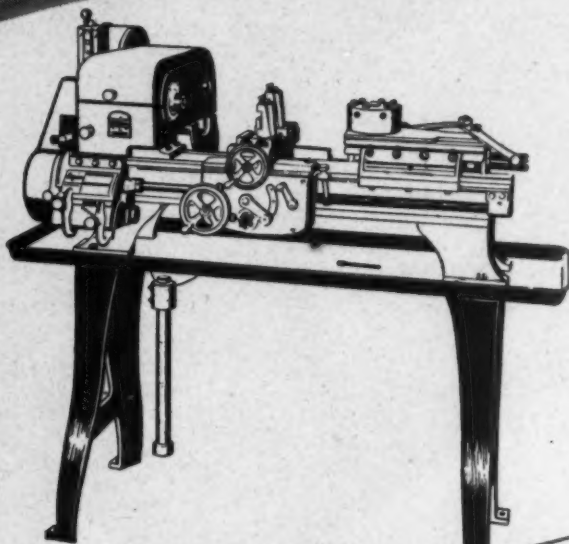
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battery of injection molding machines.

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THE USE OF

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The tooling of Logan Lathes is just as important in obtaining maximum results as having an efficient machine. Logan Accessories are specially constructed with many patented improvements. They are built to the same standards maintained in manufacturing Logan Lathes. When used with Logan Lathes, accuracy is maintained, costs are lowered and output is increased. The various chucking accessories shown here are typical of a wide variety of other accessories that are available. To assure maximum efficiency from a Logan Lathe, ask your dealer or write for the latest Accessory Catalog.

Logan

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A Name To Remember When You Think of Lathes

LA 40-51 TURRET ASSEMBLY

Six position, self-indexing. Fits bed of any Logan Lathe.



No. AC 210 PRODUCTION COLLET ATTACHMENT

Quick acting, lever type collet closer operates while lathe spindle is in motion. For Push type collets up to $\frac{1}{8}$ "



No. AC 201 SPEED COLLET CHUCK

Fits any lathe with $1\frac{1}{2}$ " x 8 thread spindle nose. Minimum overhang assures accuracy. For Push type collets up to $\frac{1}{8}$ "



LA 22-34 HAND FEED

For Logan Hand Screw Machines. Uses Push type collets up to $\frac{1}{8}$ " capacity.



No. AC 100 and AC 100 PRODUCTION COLLET ATTACHMENT

Quickly attached to Logan Lathes. Operates while spindle is in motion. For Draw-in Collets up to $\frac{1}{2}$ " capacity.



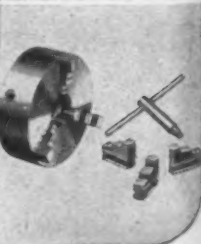
No. AC 100 and AC 101 DRAW-IN COLLET CHUCK ATTACHMENT

Accurately chucks work between $\frac{1}{16}$ " and $\frac{1}{2}$ " capacity.



No. 420 3-M.W. 5-INCH UNIVERSAL CHUCK

also No. 444 5-INCH INDEPENDENT CHUCK Need no separate back plates. For $1\frac{1}{2}$ " x 8 thread spindles.



French Keep Air Research Alive; Plan for Future Despite Nazis

REVIEW of progress of aviation in France from June, 1940, to the end of 1942, and interesting details of French research and plans of reviving the industry at war's end were given recently at a lecture to the Society of Engineers and Technicians of Fighting France by Rene Lucien in England.

After describing the removal of the official side of the French aircraft industry, including administration, research and experimental flying, to the Unoccupied Zone in 1940, S. Lt. said that Air France was operating after the Armistice with Bloch 342s and Bloch 220s. He said that the French intended to build Bloch 161s, a development of the Bloch transport. It was a four-motor, low-wing monoplane and was to carry 22 passengers.

Other types developed after the Armistice were the S.O.-30n and S.O.-30r, which were both intended for high flying with pressure cabins. The S.O.-30n was designed to carry 23 passengers and 1¼ tons of freight for a range of 1200 miles at 10,000 ft. Maximum speed was 300 m.p.h. It was to be ready to fly at the end of 1942. It was powered by two 1100 h.p. Gnome-Rhone 14n motors. A development, the S.O.-30r was to be fitted with two 1650 h.p. Gnome-Rhone motors and have a nosewheel. It was to carry 30 passengers and 1½ tons of freight. Maximum speed was to be 335 m.p.h.

4-Motor Craft Developed

Another two-motor type was the Breguet 500, powered by Gnome-Rhone 14s.

Four-motor transports were developed by Breguet and S.N.C.A.S.O.

Mails had been carried in Unoccupied France by an organization, S.C.L.A.M with three Caudron Goelands and three Caudron Simouns. This concern has kept transport planes ostensibly for official trips, but these also had been used for

training, according to word which has leaked out of France.

Three flying boats were built by the French for trans-oceanic flights, the Poez C.A.M.S. 161, the S.N.C.A. S. E. 200 and the Latecoere 631. The first flights were made in January, September and October, 1942, respectively.

Certain aeronautical construction societies were kept alive. The C.A.P.R.A. Society planned to run a joint airmail line with the Portuguese to New York from Lisbon.

Nazi Control Incomplete

German control of industry was far from perfect. For instance, one foundry went unnoticed until Oct., 1942. Research prospered even better. All questions which did not require trials in flight, easily controlled, were fully studied.

S/Lt. Lucien listed the problems for the future of French aviation as: to ensure that factories which escape being destroyed will be utilized, to prepare the reconstruction of the entire airways system, and to revive technical research.

The French are considering the utilization of military planes after the war, but they realize that the emphasis will be on long flights at above 20,000 ft. requiring a pressurized cabin, which gives a lead to American commercial planes.

Automatic Pilot for Gliders Being Made by Jack & Heintz

An automatic pilot for Army gliders is being manufactured by Jack & Heintz, Inc., Cleveland, the company announces. Through use of the device, which is an adaptation of the automatic pilot manufactured by the company for military planes, a glider can be set to follow a tow plane at a given altitude on a true course. It is claimed that in the future gliders may be flown in bad weather, which formerly grounded them, since it was necessary for the glider pilot to be able to see the tow plane.

TWA Prop Goes 2,750,000 Mi.

Transcontinental and Western Air recently returned to Hamilton Standard Division, United Aircraft Corp., a propeller which had seen 13,881 hrs., 44 min. service, or 2,750,000 miles of flying. TWA asked that it be overhauled.

Helicopter Channels Seen

In 10 years, helicopter traffic over inhabited areas will be "fully channelized and as strictly regulated as is surface traffic today," C. B. F. Macauley, director of aeronautical research for Dohner and Lippincott, declares. Macauley envisages the development of "great merchant marts in a ring around the perimeter of metropolitan areas."

FOR SALE

4 P.&W. Wasp Jr. Engines

New and used parts for

Lockheed 10A (Electra) Aircraft

Both engines and parts are in first class condition having been serviced by a crew that won for Northwest Airlines the Annual National Maintenance Award. They are now for sale only because our Electras have recently been taken over by the Army Air Forces. This is a rare opportunity to acquire first class equipment at a low price. Full inventory lists and prices may be obtained by addressing . . .

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Vice President in Charge of Operations

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Manufacturer Praises

Price Consciousness

Price consciousness which now characterizes the aircraft industry is a good thing, inadvertently creating a sound basis for post-war production, in the opinion of Ray Ellinwood, president of Adel Precision Products Corp., manufacturers of aircraft hydraulics, anti-icing and line support equipment.

Discussing the current transition period from the viewpoint of component part manufacturers, Ellinwood contended that the emphasis on lowered costs to stand reduced prices has brought war producers to a competitive basis common in a peacetime economy.

At Adel, which recently turned out its 100 millionth line support clip, prices of clips have been cut seven times to 54¢ less than the original cost. A solenoid valve, representing a \$35,000 tooling cost alone, now sells at \$5.07 instead of \$20. Similarly, hand pumps have been reduced from \$40 to \$29.

"It's For Victory!"



Back the Attack...
BUY MORE THAN BEFORE!

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Hotel Hawaiian Room
Lexington

CHARLES E. ROCHESTER, Vice-Pres. and Mng. Dir.
LEXINGTON AVE. AT 48th ST., N. Y. C. 17



"You are the virile, red-blooded type who loves adventure. Nothing daunts you. You could fight your way through the wilds of the jungle; across the blistering desert sands. Read TRUE, The Man's Magazine!" (One of the great family of Fawcett Publications.)

Chemical Treatment of Airfields Used to Make Soils Waterproof

CHEMICAL TREATMENT of soils to establish the "stability" necessary for their use as aircraft landing fields and roads is making advances over older forms of "mechanical" stabilization, such as mixing the natural soil with gravel or crushed rock.

This is reported in a recent publication, entitled "Stabinol", of the Hercules Powder Co., Wilmington, Del., which has been experimenting in resins for the chemical treatment of soils for six years.

Stabinol has reached the practical stage of development and has been used to treat roads and streets, plane landing fields, recreational areas, parking lots, and other types of construction projects, including work at vital military installations. It has been used by the Army and Navy for projects in Delaware, Florida, Georgia, Mississippi, Ohio, North and South Carolina, Alabama, Massachusetts, Missouri, and Virginia.

The resin treatment counteracts the most common cause of soil instability—water—by making soils waterproof. It is not a soil binder, however, and should be used only with soils that have sufficient natural bonding material. The treatment has been found effective with a wide range of soils. Before work is started, samples of the soil to be treated must be analyzed in a complete series of tests. The site must also be examined before treatment in order to determine the se-

verity of exposure to which the soil is subjected.

The Hercules Co. lists the following advantages of its product: (1) it is effective in a wide range of natural soils; (2) the quantity of resin required is very small, and the material itself is quite inexpensive; (3) it is added as a dry powder, is readily spread and mixed with ordinary road-building equipment; (4) soils which have been mixed can be stockpiled or reprocessed at any time without loss of effectiveness; (5) it is particularly adaptable to soils with relatively high silt or clay content.

If used as a sub-base for a hard surface, Stabinol, by preventing water from penetrating underneath will enable the top base to dry faster after rains. Also, the top surface will not bog down under the pressure of traffic immediately after a rain because the Stabinol-treated waterproof sub-base will remain firm.

Rentschler Field Improved

Pratt and Whitney Aircraft's Rentschler Field is being improved with three asphalt runways, each approximately 5,000 ft. long. A new control tower 57 ft. high, new lighting facilities, and a new cafeteria are included in the project.

Hydraulic Test Machines

Greer Hydraulics, Inc., 39 West 60th St., New York, 23, announces a new line of hydraulic test machines which fill, filter and check aircraft hydraulic systems and inspect production hydraulic devices. The line is made up of various types and sizes, including stationary and portable models, driven by gasoline or electric motors. Model HS 100 has been developed specifically for testing airplane hydraulic systems and their components; Model HS101 for inspection and operational testing of any single or complete line of hydraulic components, or for research and development testing; Models HS 102 and HS 105, both portable, for testing airplane hydraulic systems on the final assembly lines or on the field.

Ignition Conduit

Aerocon, a new ignition conduit, is now being manufactured by Tite-flex, Inc. of Newark, N. J. It is claimed that this new shielding conduit has superior electrical shielding qualities over conventional conduit, and better withstands aircraft engine vibration. Actual flight tests are said to have proven ignition harnesses equipped with Aerocon have remained pressure-tight after 500 flight hours.

New-Type Riveting Assembly

A revolutionary new type of riveting assembly—a special bucking bar set-up which can be installed in a jig so as to function automatically or can be welded manually—is announced by Consolidated Vultee Aircraft Corp. Inventor of the assembly is Morris Brown, a toolmaker in Convair's plant No. 2 at San Diego.

SAE Appoints Compter

George H. Compter has been named staff engineer in the Aeronautics Division, Society of Automotive Engineers. Until recently, he was manager of the inspection salvage department of Brewster Aeronautical Corp.

India Now and Post-war

To manufacturers of aircraft, aero engines, aeronautical equipment, accessories including aviation, radio, aerodrome lighting and kindred lines The Asian Air Associates—a Company well-founded and financially sound—are prepared to consider the exclusive agency for or sub-licenses to manufacture—their manufactures in British India. The Asian Air Associates are planning a chain of maintenance stations at the major air ports in India which places them in a unique position to represent Air Lines and undertake the maintenance of aircraft.

Bank and other references submitted.

Communicate direct to:

THE ASIAN AIR ASSOCIATES

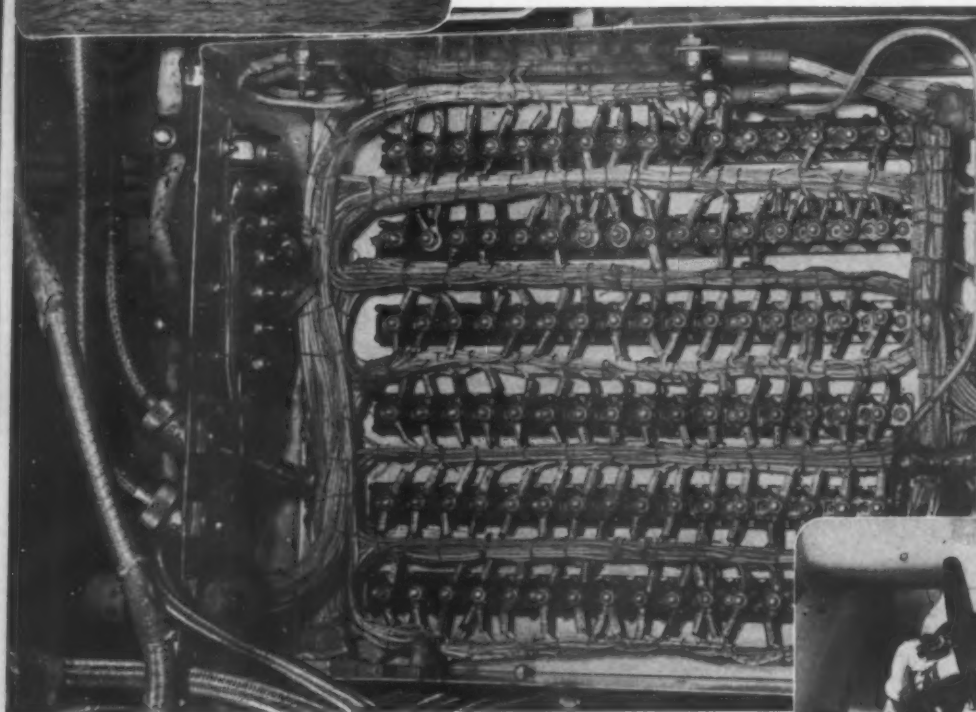
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PAN AMERICAN WORLD AIRWAYS' "DIRECT WIRES"

....for calling Clippers
in any corner of the earth



Wiring assembly of the Pan American Clipper's communications equipment. It contains hundreds of feet of Belden wire.

In war... in peace... Belden aircraft and radio wires serve the aviation industry. Here is an application showing extensive use in Pan American Airways' vital long range communications equipment.

Belden aircraft wires are products that only ingenuity, skill, careful control of production, and use of service-tested materials can build. Belden wires have been developed through years of testing, experimenting, and cooperation with aircraft engineers; they offer the plus values to meet the exacting requirements of the aviation industry.

Specify Belden

Belden Manufacturing Company
4691 W. Van Buren Street, Chicago 44, Illinois

Belden *Aircraft* WIRE

Starter, Lighting, and Instrument Cables ✓ ✓ ✓ SPARK PLUG WIRES



Maintenance crew at work on the
Clipper between flights.



Awarded the U.S. Treasury
Special Citation of Merit
for initiating the War Bond-
or-Cash Dividend Plan

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Manufacturing Roundup

ALUMINUM COMPANY OF AMERICA announces that eight aircraft manufacturers are using the new aluminum alloy "75S", which is said to have a compressive yield strength twice that of common structural steel, and tensile strength greater than that of any aluminum alloy now used in American warplanes.

FAIRCHILD ENGINE AND AIRPLANE CORP. is manufacturing droppable plywood tanks by its "Duramold" process, which involves curing the plywood adhesives by an application of electronics. One tank is boat-shaped, with a flat top which fits snugly under the belly of the Douglas A-20. Another, egg-shaped, is attached to the belly of the Navy's Corsair by bomb shackles.

BREWSTER AERONAUTICAL CORP. reveals that of the 5,694 workers laid off to date at Long Island City, at least 1,134 have been placed in new war jobs through the New York area office of the War Manpower Commission.

BENDIX AVIATION'S SCINTILLA MAGNETO DIVISION recently sent representatives to Springfield, Mass., to look over the \$3,000,000 Federally-owned foundry which the Springfield Bronze and Aluminum Co. is desirous of turning back to the government. A price of \$10 a square foot is reported to have been put on the property, which has also been viewed by Pratt and Whitney, Wright Aeronautical, and General Motors appraisers.

BROWN INSTRUMENT DIVISION, MINNEAPOLIS-HONEYWELL REGULATOR CO., is manufacturer of a flight test recorder, an electronic instrument, which records 144 points in testing aircraft in about the same number of seconds. The recorder is now being exhibited publicly for the first time in Franklin Institute, Philadelphia.

PRODUCTION

BELL AIRCRAFT CORP. has produced its 10,000th fighter plane. All but 29 of this number were manufactured in three years. While most of the 10,000 were P-39's, the last fighter to roll off the Bell assembly line was the recently designated P-63. This plane has a low drag wing and a two-stage, supercharged Allison engine for service up to 40,000 ft.

NAVY has opened an aircraft modification and engineering center, employing about 2,500 persons, at the Government-owned aircraft plant in Johnsville, Pa., which now is leased to Brewster Aeronautical Corp. The plant, which will handle engineering work for which no other facilities are available, will be operated as an adjunct of the Naval Air Material Center at Philadelphia. In operating the Johnsville plant Navy will avoid the necessity of spending several million dollars for additions which otherwise would be necessary at the Naval Air Material Center.

FORD MOTOR CO. has produced 5,000 Liberators in less than two years. Half of this number has been built at Willow Run during the first six months of 1944, and 4,000 in the last year. Willow Run's first bomber was accepted by the Army Sept. 30, 1941. Approximately 1,800 of the total have been shipped out of the plant in completed sections to be assembled at other plants in the southwest. The remainder have been assembled and flown away from Willow Run. Beginning last week all the Ford-built bombers were being fully assembled at Willow Run.

BENDIX AVIATION'S FRIEZ INSTRUMENT DIVISION produced on a rush order the automatic recording rain gauge and water level recorder recently taken to the Chinese government by Vice President Wallace as a token gift for use in China's soil conservation program.

CONSOLIDATED VULTEE AIRCRAFT CORP. hails a "milestone" in completion of the order of 11,537 BT-13 basic trainer planes, called in a contract awarded the company in 1940. The first plane of this order, completed more than four years ago, is still flying at Guntersville Field, Alabama, Convair reports.

GLOBE AIRCRAFT CORP. announces that work has been started on three new contracts. Two of the jobs are for fuselage nose assemblies for the C-46 Commando. Globe is to build these components for both Curtiss-Wright Corp. and Higgins Aircraft under separate contracts. The third contract involves reworking wings on AT-19 and UC-78's for the Army Air Forces. Deliveries of completed units have been steadily increasing since production was started in May.

LOCKHEED AIRCRAFT'S Plant "B" at Burbank is the scene of a \$3,156,379 alteration job to meet production schedules of new type planes. The project was urged on by the Los Angeles area production urgent committee. WEBER SHOWCASE AND FITTURE CO. has been allocated a 1,150-ton hydraulic press on recommendation of the committee, to form leading edges for military aircraft wings.

FISHER BODY'S Ternstedt manufacturing unit has turned out its 100,000th gyro-horizon indicator, an instrument used to guide B-29's and other war planes enroute to enemy targets. Fisher expects to complete in the near future its 100,000th directional gyro-indicator, companion instrument to the gyro-horizon indicator, which helps the pilot keep a plane to its course even under adverse weather conditions.

Classified

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